
ENCYCLOPAEDIA
OF
INDIAN MEDICINE

लोकाः समस्ताः
सुखिनो भवन्तु ॥



SRI DHANVANTARI



॥ धन्वंतर्याय नमः ॥

DHANVANTARI from a painting got made by the late Mahārāja of Mysore, Krishnarāja Wodeyar III, for inclusion in his lithographic book Devatā-nāma kusumāñjali

ENCYCLOPAEDIA OF INDIAN MEDICINE

VOLUME ONE
HISTORICAL PERSPECTIVE

Editor

Vidyalankara Prof S K RAMACHANDRA RAO
President, Ayurveda Academy, Bangalore



POPULAR PRAKASHAN BOMBAY

On behalf of

Dr V PARAMESHWARA CHARITABLE TRUST, Bangalore

ENCYCLOPAEDIA OF INDIAN MEDICINE PROJECT

Sponsored by
Dr V Parameshvara Charitable Trust,
Bangalore

●
Chairman

Dr V Parameshvara
*M B B S, M R C P (London), F A C C, F C C P,
F I C A, F I S E, F A I I D, F I M S A, F A M S*

●
©DR PARAMESHVARA CHARITABLE TRUST
Bangalore, 1985

●
Editor

Vidyalankara Prof S K Ramachandra Rao
President, Ayurveda Academy, Bangalore

First published 1985

(3302)

Printed in India by ARUN NAIK
Akshar Pratiroop Pvt Ltd
42 Ambekar Marg Wadala Bombay 400 031

Published by RAMDAS BHATKAL
Popular Prakashan Pvt Ltd
35 C Pandit Madan Mohan Malaviya Marg
Tardeo Bombay - 400 034

PREFACE

Indian religions are well known in the world. The philosophical systems that emerged on the Indian soil have also engaged the attention of scholars all over the world. India's achievements in the field of science and technology have also been recognised. However, the fact that India developed a system of medicine, thousands of years ago, has not received wide coverage in the world. And that the system thus developed is still prevalent among the masses of India is likewise not generally known, even to historians of medicine.

There are manifold reasons for this general ignorance of Indian medicine among historians of medicine, medical practitioners outside the country and intelligentsia interested in the problems of health and disease. One is, absence of authoritative and well documented publications in English by Indians, dealing with this branch of medicine. The European indologists who have taken an interest in Indian medicine and have written on the subject do not seem to carry much credibility, because they are alien to the traditional details which are indispensable to the understanding of the spirit, outlook and value of Indian medicine. The literature available on this topic written in the traditional style of Indian languages have proved to be enigmatic to the modern reader. A great need is, therefore, felt for an authentic publication which communicates to the modern mind the traditional wisdom of India concerning medical practice.

The Encyclopaedia of Indian Medicine in six volumes has been planned to fulfil this need. The first volume provides the historical perspective as well as acquaintance with the medical literature in India. The volume has been prepared by Vidyalkara Prof. S. K. Ramachandra Rao, who hails from a family of traditional physicians and is the President of the Ayurveda Academy, Bangalore. Besides being a Sanskrit scholar and well versed in Ayurveda, he has also been a scientific worker, having headed the department of Clinical Psychology at the National Institute of Mental Health and Neurosciences, Bangalore (with which he is still associated as consultant to the Ayurvedic Research Unit).

The volume will be followed in due course by other volumes dealing with the basic ideas, methods of clinical investigation, therapeutic procedures, pharmaceutical practices and materia medica of Indian medicine. It is hoped that a comprehensive and factual knowledge of Indian medicine will be available to the world when the series is completed.

Bangalore
October 4, 1984

V PARAMESHWARA
Chairman

INTRODUCTION

Indigenous medical wisdom in India known as Ayurveda goes back to a hoary past. Even in the early strands of the Vedic corpus belonging to a period several centuries prior to the Christian era, we find references not only to medical practice but to elaborate medical theories. Medical wisdom in India was systematized at a slightly later period, and a remarkably rich medical literature has grown up since those days. Medical practice based on this systematization has continued to our own day, despite the growing popularity of Western medical practice.

Indian medical wisdom has unfortunately been confined to India, and the West is largely ignorant of it. Even in India, the traditional medical practice seems to be losing contact with the system as it was crystallized over two thousand years ago. This is so because much of the early and core medical literature, which is in Sanskrit, is still in manuscripts, hidden away in libraries and private collections, only a few major texts like Charaka's *samhita*, Suśruta's *Saṁhita* and Vāgbhata's *Sangraha* and *Hṛdaya* have been printed and translated into English. The influence of the philosophical systems, especially of Sāṃkhya and Nyāya-Vaiśeṣika, on medical thought in India has not been sufficiently appreciated. The generation of practising physicians who are also scholarly has almost disappeared. Thus the authentic tradition of Indian medical thought has not yet been presented to the modern mind. The medical world at large is almost entirely ignorant of the relevance or the value of Ayurveda.

The present series of volumes constituting *The Encyclopaedia of Indian Medicine* is an attempt to present in a manner that would appeal to the modern mind the theoretical and practical issues as was formulated in Ayurveda several centuries ago. In so doing, we have relied entirely on original texts, which constitute the nucleus of Ayurveda, and on the commentarial literature thereupon, and have attempted to reconstruct the authentic perspective of Ayurveda. The following volumes have been planned and are under preparation.

- Volume I Historical Perspective
- Volume II Conceptual
- Volume III Clinical Examination, diagnosis and methods of Treatment
- Volume IV Diseases, Drugs and their preparations
- Volume V Materia Medica (in two parts)
- Volume VI Folk Medicine

The first volume is now being published. It traces the development of medical thought through the ages and provides information about all the important medical authors and about their works available in print or in manuscripts, and content analyses of the more important works have been given, based on the first-hand study of the original texts. The purpose is to present a comprehensive picture of medical literature that is extant in the country. To facilitate comparative study, allied Asian systems of medicine (e.g. Arabian, Chinese, Tibetan, Yunani) have also been noticed.

It has been kept in mind by those who are involved in this Project that the purpose of any encyclopaedia is not only to provide information but to relate it. The entries are designed to introduce the reader to the basic principles guiding Indian medicine in the context of the country's geography, history and culture. Care has been taken to present the details objectively, and in accordance with the traditional framework. We have refrained from taking sides in the controversy regarding the relative merits of the different systems of medicine.

While the present Encyclopaedia is ultimately based on the original texts, commentaries and annotations in Sanskrit, a large number of works on Ayurveda written and published in English and in some of the Indian languages (Hindi, Kannada, Telugu and Tamil) have been consulted, as also many elderly specialists in this system of medicine. We are indebted to all these authors and scholars. But the formulation of the concepts and their applications have uniformly been made in accordance with the original textual tradition disregarding later revisions, evaluations and amendments.

The enlightened interest of the eminent Cardiologist of Bangalore, Dr V Parameshvara has originated this project, and has been sustaining it. Being himself a physician trained in the best traditions of modern medicine, he is interested in the world getting acquainted with the contributions of traditional medicine in India so that there could be greater benefit to mankind.

CONTENTS

<i>Preface</i>	v
<i>Introduction</i>	vii
<i>Abbreviations and major references</i>	xi
The Historical Perspective	2
Definitive Treatises of major authors, Popular Manuals Physicians' Hand-book and Materia Medica (alphabetically arranged)	16
Appendix Selections bearing on the History of Indian Medicine	110
Select Bibliography	128
LIST OF ILLUSTRATIONS	
Dhanvantari	<i>Frontispice</i>
Galaxy of Indian Men of Medicine	<i>pp xiv-xx</i>
Specimen Pages of Language Texts	<i>pp 134-148</i>

ABBREVIATIONS & MAJOR REFERENCES

AD	Aruna datta (author of SaSu)
AE	Āyurvedic Encyclopaedia, A Lakshmipathi, Madras 1959, in 2 Vol
AHr	Ashtānga hrdaya (Vāgbhata, ed A M Kunte, NS, Bombay, 1891)
ARH	Āyurveda rasāyana (Hemādri on AHr)
AS	Ashtānga-samgraha (Vāgbhata, ed Atrideva Gupta, NS, Bombay, 1951, with Hindi tr)
ASM	Ayurvedic System of Medicine, (Nāgendra Nāth Sengupta, Calcutta, 1919)
ASS	Ānandāśrama Sanskrit Series, Pune
AV	Āyurveda vijñānam (Vinodalāl Sengupta, Calcutta 1916 and 1928, in 2 vol)
AVV	Āyurveda-vyadhi-vijñānam
B	Baidyanātha Āyurveda Bhavan, Nāgpur,
BNR	Brhan nighantu ratnākara (Bombay, 1891)
BP	Bhāva-prakāśa (Bhāvamiśra)
BPN	Bhāva prakāśa-nighantu
BR	Bhaishajya-ratnāvali (ed Govindadāsa, Calcutta, 1893)
BS	Bhela samhita (Bhela, ed Calcutta Univ , 1921)
BSR	Basava rājyam (Basava-rāja, Madras, 1951 in Telugu ch)
BYT	Brhad-yoga-taranginī (Trimalla-bhatta)
C	Chowkhamba Series, Vārānasī
Chkp	Chakrapani datta (comm on CS)
CMA	Clinical Methods in Ayurveda (Śrīkantha-mūrthy, C, Vārānasī 1983)
CS	Charaka samhita (ed Yādavji Trikumji Āchārya, NS Bombay, 1941)
CSS	Chikitsā sāra samgraha (Vangasena, Calcutta, 1884)
DGV	Dravya guna-vijñāna (P V Sharma, C, Vārānasī, 1981, in Hindi, in 5 vol)
DGVY	Dravya guna-vijñānam (Yādavji Trikumji Āchārya, Nagpur, 1953)
DMA	Digestion and Metabolism in Ayurveda (Dwārakānāth C, Calcutta, 1967)
DN	Dhanvantari-nighantu (ASS, Pune, 1927, includes RN)
GnS	Gana nāth Sen
GN	Gada nighraha (Sodhala Bombay 1911 and 1915)
HIM	History of Indian Medicine (Girīndranāth Mukhopādhyāya, Calcutta, 1923-26, in 3 vol)
HIP	A History of Indian Philosophy (Surendranāth Dasgupta, Cambridge Univ Press Vol II, 1952)
HO	Osteology (Hoernle, Oxford 1907)
HS	Hārīta samhita (Calcutta, 1887)

IMM	Indian Materia Medica (K M Nādkarni, Popular Prakashan, Bombay, Revised and enlarged, 1976, in 2 vol)
JIM	Indian Medicine (Julius Jolly, translated from German into English, Kāshīkar, Pune, 1951)
KK	Kalyāna-kāraṇa (Ugrāditya, Sholāpur, 1940)
KS	Kāśyapa-saṃhitā (ed Yādavji Trikumji Āchārya, NS, Bombay, 1938)
MK	Madhu-kosha (Viṇaya-rakṣita Calcutta, 1876)
MMH	Materia Medica of the Hindus (Uday Chand Dutt, Calcutta, 1922)
MN	Mādhava-nidāna (Mādhavakara, ed Yādavji Trikumji Āchārya, NS, Bombay, 1884)
MPN	Madana-pāla-nighantu (Madana-pāla)
NiS	Nibandha-saṃgraha (Dalhana, on SS, NS, Bombay, 1915)
NS	Nirnaya-sāgar Press, Bombay
PRM	Paryāya-ratna-mālā (Mādhava Patnā, 1946)
PS	Pratyaksha-sārīram (Gananāth Sen, Calcutta, 1913)
PSH	Positive Sciences of Ancient Hindus (Brajendra Nāth Seal, New edition, Motilāl Banārsidāss, 1958)
PSS	Pārishadyam Śabdārtha-sārīram (B, Nāgpur, 1964)
RM	Rasendra-mangala (Nāgārjuna?, Gondāl, 1924)
RN	Rāja-nighantu (Abhidhāna-chintāmani, ASS, Pune)
RRS	Rasa-ratna-samucchaya (Nityanātha, ASS, Pune, 1890)
RV	RgVeda
RVS	Rasa-vaśeṣhika-sūtra (Nāgārjuna?, Trivandrum, 1928, with the comm of Nara-simha)
SaS	Śārngadhara-saṃhitā (litho , Bombay, Śaka 1799 with Marāṭhī trans)
SaSu	Sarvāṅga-sundara (Aruna-datta on AHR, Bombay, 1889)
Sds	Śiva-dāsa-sena
SdN	Sodhala-nighantu (Sodhala, BORI, Baroda, Pune 1972)
SHM	A History of Medicine (H Sigerist, Oxford, 1951-1961, in 2 vol)
SIH	Surgical Instruments of the Hindus (Girindra Nāth Mukhopādhyāya, Calcutta Univ , 1913-1914)
SK	Sāmkhya-kārikā (Īśvara-krṣṇa)
SKD	Śabda-kalpa-druma (Rājā Rādhākānta Deb, C, Vārānaśi, 3rd ed , 1967, in 5 parts)
SM	Siddha-mantra (Keśava, ed Śankar Dāji Śāstrī, Bombay, 1897)
SMP	Siddha-mantra-prakāśa (Vopadeva Madras, 1860)
SN	Śāligrāma-nighantu (Lālā Śāhagrām, Vārānaśi, 1891)
SS	Suśruta saṃhitā (Susruta, ed Yādavji Trikumji Āchārya, NS, Bombay, 1915)
SSS	Suśruta-saṃhitā A Scientific Synopsis (P Ray et al , Indian National Science Academy, New Delhi 1980)
sth	sthāna
su	sūtra
SY	Siddha-yoga (Vrnda, Pune, 1894)
VGP	Vastu-guna-prakāśikā (Vāsudeva-śāstrī, Rājamahendravarām, 1938, in Telugu)
VJ	Vaidya-jīvana (Lolamba-rāja, Bangalōre, 1923, in Kannada ch)
VRM	Vaidyaka-ratna-mālā (MSS copy)
VSS	Vaidyaka-śabda-sindhu (Umesh Chandra Gupta, Calcutta, 1894)
VSSK	Vaidya-sāra-saṃgraha (Bangalore, 1882, in Kannada ch)
VyK	Vyākhyā-kaumudī (MSS copy)
Vymk	Vyākhyā-madhu-kosha (MSS copy)
YR	Yoga-ratnākara (ASS, Pune, 1889, Mysore, 1899 in Kannada ch , with Kannada and Telugu trans)
YV	Yajurveda
ZHM	Hindu Medicine (H Zimmer, Baltimore 1948)

Galaxy of Indian Men of Medicine

लोकाः समस्ताः
सुखिनो भवन्तु ॥



SRI DHANVANTARI

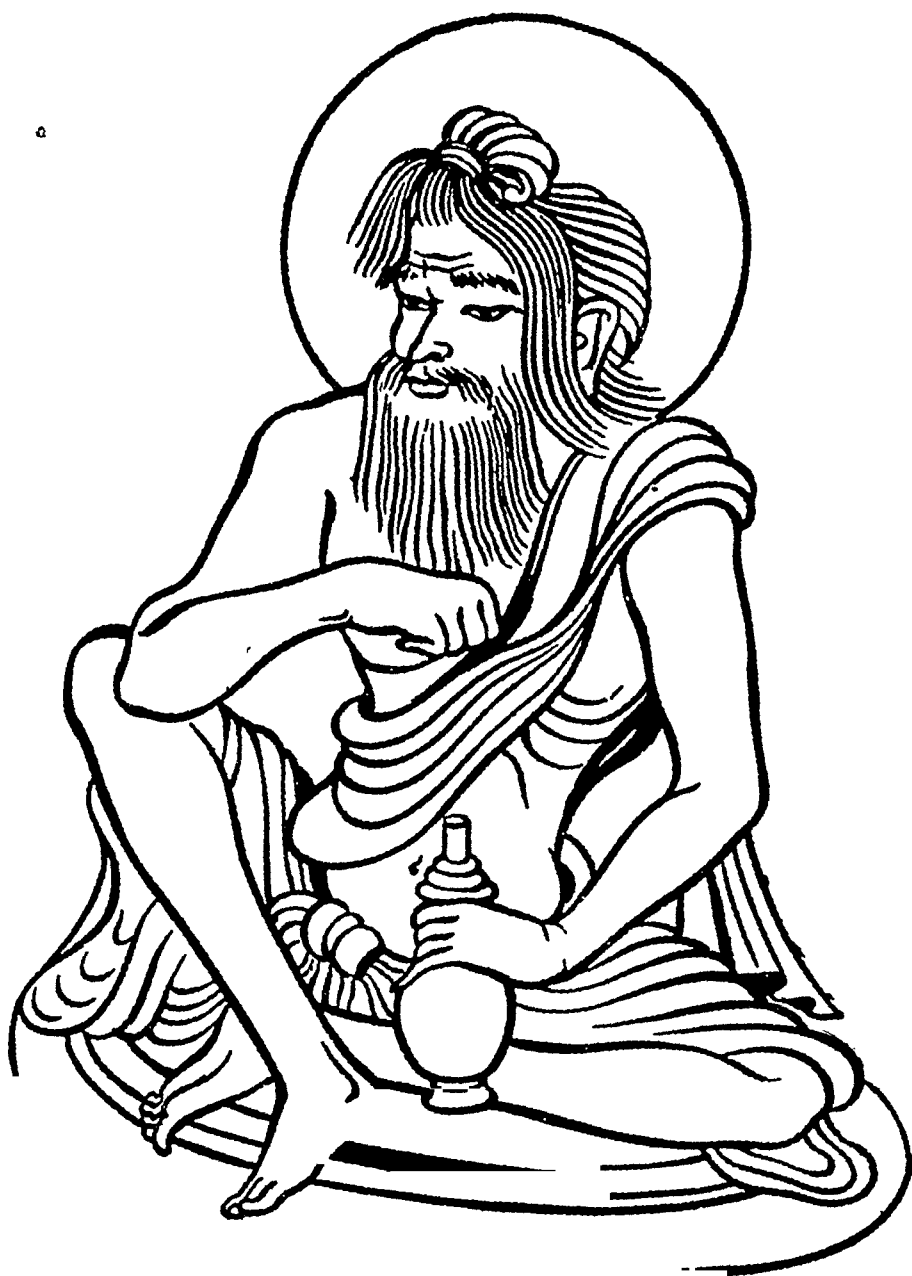


ĀŚVINĪ-DEVAS adopted from Śilpi's sketch from a sculpture in the temple at Chidambaram in South India, originally made for the Tamil periodical *Ānandavikāṭan*

PĀTAÑJALI who is credited with having redacted *Charaka-Samhitā* adapted from Śilpi's a sketch of a sculptural representation in Chudambaram temple



BRAHMA A sculpture from Khajuraho Temple



ĀTREYA from a Mahāyāna manuscript (reproduced in Hobogirin's *Japanese Chinese Dictionary of Buddhist Terms*), appearing as Plate III in Radha Kumud Mookerji's *Ancient Indian Education*, Motilal Banarsidass, Delhi, 1969



INDRA from a sculptured panel in the Malinithan temple Assam, reproduced in A. Bhattacharjee's *Icons and Sculptures of Early and Medieval Assam* Inter-India Publications Delhi 1978



NĀGĀRJUNA from a Tibetan scroll-painting



NAGARJUNA from a Tibetan manuscript xylograph



RUDRA as Dakṣināmūrti from a mural in Padmanābhapuram
Palace Trivandrum

SŪRYA adapted from a Śilpi's sketch of a sculpture in Chidambaram temple in South India, originally made for the Tamil periodical, *Ānandavikatan*



The Sage AGASTYA adapted from Śilpi's sketch of a sculpture in the Chidambaram temple (South India), originally reproduced in the Tamil periodical *Ānandavikatan*

The Historical Perspective

The Historical Perspective

Indian medicine has come down to us in several strands, four of which stand out rather conspicuously. The first strand is composed of professional physicians, called *vaidyas* or *bhishaks* originally belonging to a class of people known as the *ambashtas*. The second consists of wandering pedlars, mostly of tribal origin, who collect herbs and drugs from forests and mountains and sell them in villages. The third group comprises temple priests, especially of the Vaikhānasa persuasion, who are also required to function as physicians. The fourth strand is illustrated by what may be called the 'home remedies', the medical wisdom and practices that were until recently current within the domestic set-up as "grandmother's prescriptions" all over the country.

It is needless to say that all the four strands have unfortunately fallen on evil days, and the traditional skill and wisdom have almost entirely disappeared. To inquire into their background today may merely be an historical exercise. But in the context of the present attempt to revive or revitalize the indigenous medical practices in India, such an inquiry would appear not only relevant but also necessary.

It can readily be seen that the first of these strands relies on an elaborate literary tradition and an empirical discipline. The other three are obviously rooted in folk practices and are to an extent shaped by cultic ideas. They naturally lack a documented or standardized tradition to sustain their prescriptions and practices. But considering the

widespread and singularly striking correspondence between these practices in different parts of India, it is reasonable to assume that the folk tradition, although unwritten, has been deep-rooted and broad-based. It is possible that even the medical wisdom and skill of the professional physician in ancient India were ultimately founded on folk tradition. The essential framework was provided by the folk expertise, and the details were worked out in subsequent years by observation, reasoning, experience, and also experimentation.

This is not unnatural, for health was one of the major folk preoccupations. Man's concern with his health is as old as his life on earth. That the body should function efficiently was as much of a necessity in the early stages of man's existence as it is now. In fact, the necessity then was greater than now, for man had to be alert enough to grapple adequately with the challenges from nature that swooped suddenly on him. The terrors of the wild and the vagaries of the weather held out risks for him. The food that he ate might turn into poison, and his bones might crack on a hunting spree. His encounters with nature were many and hazardous. The disabilities that his body might suffer would throw him out of the stern race for survival. Add to this the fear of the unknown and the uncanny that has haunted man from his earliest days till today.

Whatever the social status attached to the calling of a professional healer or pedlar in drugs, that the society needed his services has been evident all through man's career on earth. During the early stages, when man's life was more natural than it came to be later, his health would be governed largely by instinct, and his concern with it would largely be a matter of common sense. The remedial measures for the ailments would be intuitively apprehended, rather than reasoned out and deliberated upon.

One of the early medical authorities

Charaka, has been credited with two statements that are apparently conflicting. One of them is that as long as man lived a natural life, he was altogether free from ailments. There came, in other words, a time when his life was no longer natural, and then the ailments broke out and have been plaguing him ever since. The other statement ascribed to Charaka is that diseases and mankind have been co-existent all along. There was no period in human history when ailments were altogether absent. His reasoning is as follows. Never was there a period on earth when life was not there, and there never was a condition of life when intelligence did not help life. There have been, therefore, in every stage of life on earth, beings who were not only intelligently aware of the unfavourable conditions of body and life, but also of the procedures that would correct such unfavourable conditions. In other words, ailments as also medicines have always existed. Health has been a continuing concern of man.

Professional medicine in India has four major lines of development, all of which go back in their origin to a very remote past. Two of them, one represented by the physician Charaka and the other by the surgeon Suśruta (both of whom lived in centuries prior to the Christian era), are collectively designated as *Āyurveda* (or the Science of Life), and are sought to be integrated into the Vedic corpus. They constitute but one tradition, eight-fold in details. The third line of development is the system of therapeutical alchemy known as '*Rasavaidya*' (or the *Rasāyana* school), in which the use of metals and mercury is extensive. This is the meeting place of Indian chemistry and Indian medicine. This system, normally included in the *Āyurveda* tradition, developed almost independently of the Vedic corpus, and profited by contact with such cultures as the Arabian, the Persian and the Chinese. The fourth line of development is the Siddha (or

'the adept') system, the origin of which is largely obscure, but was obviously outside the Vedic tradition, at present, it is prevalent only in South India, especially Tamil Nadu. There can be little doubt that all these systems were rooted in the Tāntrik culture, and were to a great extent influenced by the Sāmkhya-Yoga complex.

The fear of death which has ever haunted man has been the most potent motivation for the development and discovery of techniques to prolong life—the goal of all spiritual endeavour as well as all the worldly activities of man is 'deathlessness' (*amrtam*) or continuity of existence. In fact, religions which believe in life hereafter and in the immortality of soul have sprung from this deep-seated longing. The early attempt was to prolong the physical existence itself, to make the body strong enough to survive the odds, to render the body itself in a sense immortal, and to transform the essence (*rasa*) of the fleeting physical existence into a diamond-like substance (*vajra*). Alchemy, as is well-known, works within this framework.

If death generates a strong sense of fear, disease is likewise a major source of concern. Death is inescapable, but diseases could be prevented and cured. When the causes of disease were largely unknown, evil spirits or malevolent deities, were regarded as causes and black magic, witchcraft and sorcery gained importance in man's imagination. Not only religions have passed through this stage, but even science has gone through it. Medicine, in particular, was, in its early phases of development intimately involved with these apparently irrational procedures. It was only gradually and recently that medicine was extricated from this involvement.

In Indian medicine, the passage from the irrational to the 'rational' was not only very gradual, but in a sense, never complete. It does not, however, mean that in India medicine remained stagnant and tied up with

primitive beliefs Far from it It made marvellous progress, especially Āyurveda Its diagnostic methods, therapeutic procedures, employment of a large number of articles most of which are commonly used in the Hindu kitchen, discovery of the excellent medicinal properties of herbs, plants, trees and spices, and the determination of the dosage and the manner of taking medicines were all very well thought out, tried out, codified and systematised

And more than all this, Āyurveda developed a neat and consistent philosophy, which again is a marvel considering its antiquity This philosophy is singularly free from 'the primitive mentality' which sustained magical practices The old ideas of deathlessness, permanence of bodily existence and immunity from all possible forces of disintegration were in Āyurveda brought down to the idea of sound and effective health There can possibly be little indeed that is mystical in a medical system But intuition has its own role to play, and many of the basic ideas of the philosophy of Indian medicine were obtained, not so much by reason or observation as by a different process which may be described as 'irrational'

The exact process by which the ancient sages arrived at the fundamental concepts like those of *dosa* and its *vaiśāmya* is obscure Equally uncertain is how they identified the medicinal properties of hundreds of plants, or how they formulated the precise pharmaceutical details The usual methods of trial and error, drug sample surveys, and observations in controlled conditions are of course to be ruled out There is a reference to animal-behaviour in conditions of sickness having given a clue to human beings (AV, 8,7,23-26) But this was naturally in a limited framework Likewise, the folk acquaintance with herbs, which is mentioned (CS, Su Sth 38,5), should also have been of limited application

Notwithstanding the accumulation of

significant, data, refinement in treatment methods, improvement in the methods of drug preparation, the ideological position remained substantially unchanged throughout the ages While the practice was thoroughly rational, the theory remained 'irrational' (in the sense of being beyond reason but intuitively justified) And the use of magical formulae, precious stones, amulets, talismans, and mystic diagrams for curative ends continued alongside an elaborate pharmacopoeia It is curious, if also somewhat paradoxical, that magic and medicine could coexist for such a long stretch of time in a country that has been for ages intellectually alert

The two lines of development of medicine in India represented by Charaka (C second century B C) and Suśruta (C sixth century B C) are together known as Āyurveda, and go back to an uncertain antiquity There are legends which seek to establish a continuity between the Āyurvedic tradition and the Vedic tradition, with an assumption that the Vedic tradition is without an identifiable beginning

Sometimes, Ayurveda is regarded as the fifth Veda (e g *Brahma-vaivarta-purāna*, 1,16,9-10, and *Kāśyapa-Samhitā*), but it is more usual to regard it as a supplementary Veda (*upaveda*) According to *Mahābhārata* (2, II, 33 as spelt out by the commentator Nīlakantha), it is one of the four *upavedas*, others being archery (*dhanur-veda*), musicology (*gāndharva vidyā*) and political science (*artha-sāstra*) Within the Āyurveda tradition itself, the medical science is regarded as an appendage (*upāṅga*) of the fourth Veda, viz , *Atharva-veda* There is a belief that this appendage originally comprised 1,000 sections (while the Veda itself consisted of a little more than 6000 verses!), but in consideration of the brevity of human life and the poverty of our wisdom, this immense mass was supposed to have got attenuated in course of time to just eight

divisions, the extant *ashāṅga-Ayurveda*. Whether it is regarded as an appendage (as Susruta does), or as a supplementary portion (as Vāgbhata does), or as an independent Veda (as Charaka does), its association with *Atharva-veda* is generally an accepted proposition.

It is well known that *Atharva-veda* is outside the classical Vedic complex which originally was only threefold (*trayī*) — *Rk*, *Yajus* and *Sāman*. Although *Atharva-veda* came to acquire the Vedic status at a somewhat later date, the content is clearly more ancient than the *Rks* themselves.¹ It has been shown that the *Atharva* really goes back to the Indus age.² Indeed, the outlook of magical spells, amulets, charms, incantations, curative abracadabra, witchcraft and sorcery that we find predominant in this Veda, reflects a primitive mentality which is also to be found in *Rgveda*.

Atharvāṅgiras, the old name for the *Atharva-veda* suggests a twofold approach: pacificatory-curative practices (*śānta*) and the practices of witchcraft and sorcery (*ghora*). Both practices were alike in the hands of priestly magicians and 'medicine-men' (the *atharvans*), who dominated the scene before and during the *Rgvedic* period. The situation has continued till now, after nearly 7,000 years, in the rural parts of India and among the tribal folk.

Kullūka-bhatta, Manu's commentator, was right when he said that there are in this country two distinct traditions, Tāntrik and Vedic.³ The latter is generally, but not necessarily, associated with the Aryan achievement of an abstract, other-worldly, sacrificial-symbolic, intellectual-philosophical outlook, and the former is identified with the numerous pre-Aryan folk cults with a ritualistic involvement, especially related to the Mother-goddess and strongly oriented to the satisfaction of natural instincts. There is little doubt that *Atharva-veda* emerged out of this mass of popular beliefs and practices,

in an attempt to accommodate them within the Vedic tradition.

It is highly significant, therefore, that *Ayurveda* is related to *Atharva-veda*. Of the nine classical recensions (*śākhās*) of this Veda, only two (Paippalāda and Śaunakīya) are available now. The ninth recension, called 'chārāṇavaidya', no longer extant, presumably contained the lore of wandering medical practitioners and also curatives (*bheshajāni*). Probably, the wandering physicians of this age were responsible for the creation of a school of medical thought, expounded and defended later by the Ātreya-Charaka line of development.

It is interesting in this connection to recall that *Charaka-saṃhitā* argues that there was no time when medical knowledge and practices were not current among the people. *Ayurveda*, in this view, has a timeless continuity, when it is related or affiliated to Veda. It is in the nature of a concession to sophistication. It would be wrong to regard *Ayurveda* as a development of *Rgveda* or of *Yajurveda* as the 'Vedāṅgās' (like Nirukta, Jyotisha, Chandas and Śikshā) were. In fact, it belongs more naturally to the amorphous heterogeneous Tāntrik tradition, which in point of time was pre-Vedic.

When we find characteristically Ayurvedic ideas like the circulation of multiple breaths inside the body, or the three pathogenic factors (*tridoṣa*), or the medicinal properties of the herbs and plants (*oṣadhi*) in the Vedic literature, it is to be assumed that the Vedic culture found it necessary or expedient to assimilate these meaningful or prevalent ideas belonging to the people at large.

It is psychologically significant that Vedic references with regard to physicians and to the medical practice in general betray an ambivalent feeling. It was necessary and practical to accept medical aid in times of need, and that is how medical knowledge was incorporated in the Vedic group, although this knowledge came from the folk that they

frequently fought with Rudra, clearly a divinity belonging to the Tāntrik culture, was the 'first physician' (*prathamō daivyo bhūshak*) and the Vedic poet prays "O Rudra, may we not make you furious! You are indeed a bull! We hear that you are the best among physicians, and, may our children grow up with your remedies!"⁴

Aśvins are again the first physicians who protect and rescue the blind, the weak, the aged and those 'that have fallen into the pit'⁵ But they are impure (*apūtau*) 'like the physicians that wander among men' and physicians are 'unclean, unworthy of sacrifice'⁶ *Rgveda* includes a hymn to the healing herbs ('Oshadhīstuti', 10, 97), ascribed to the 'cure-man' (*bhūshaja*) and addressed to Soma, the divine king of plants who is represented on earth by the psychedelic drink (Indian hemp 'asclepiade?'), which the Vedic poets drank and offered to the gods. But the stigma attached to the healing art continued till the period in which the *Dharma-sāstras* were prepared, medicine was considered an ignoble profession which no high-born one should condescend to take up. It was a service which was no doubt vital, but in the vocational hierarchy, it was assigned an inferior status.

Whatever the reason for the initial taboo, in later times when drinking became morally reprehensible and was considered a vice which heralded other vices, the healing art which extolled the virtues of wine (as illustrated in *Charaka* - and *Bhela-samhitās* where a good case for liquor is made out) was naturally looked down upon. Ayurveda not only includes alcohol in its pharmacopoeia (*āsavas* and *arishtas*), but had use for meat and drugs extracted from animal bodies. Charaka lists as many as 170 medicines of animal origin.

The Ayurvedic notion of a happy life was not exactly to the liking of the austere, ascetic and puritanical law-givers. They naturally frowned upon such advice coming

from Ayurvedic sources. "There is no sin in eating meat, in drinking liquor, or in sex-indulgence they are natural inclinations. But there is great merit in self-restraint."⁷ Belonging as it does to the Tāntrik tradition, Ayurveda looked upon body as the home of enjoyments (*bhoga*) and also of ailments (*roga*). Drinking can be for enjoyment: it is hearty, it makes one light, is good for all beings, it removes worry, pain and fatigue, it expands the mind and corrects the disorders of phlegm,⁸ but excessive drinking (*pānātyaya*) can be seriously disturbing. And all Ayurvedic texts contain a section of treatment procedures for alcoholics.

Health for them was of the highest consideration, and proper enjoyment was after all a part of sound health. Clean life, good food, normal pleasures and vigorous health constituted the major part of Ayurvedic ethics. Deprivation and over-indulgence were equally wrong in this outlook. If austerity was prescribed, it was in consideration of health, and not because of religious reasons.

And, the physicians naturally attached enormous importance to the body, its preservation and improvement (*yoga-kshema*). A physician was expected to understand human constitution (*dehatattva*) and human nature (*dehasvabhāva*), and his job was to secure the efficiency of the physical apparatus that we call the body (*kāyasādhana*). These ideas were directly drawn from the Tāntrik tradition. The emphasis on nature and on the need to improve upon it, were basically related to the Sāṃkhya-Yoga complex. The later movements in the Vedic culture which were influenced by the Śramaṇa culture (Buddhism and Jainism), on the other hand, regarded the body as something to be vigilant about, and to be ruled over with an iron will, and they commended the reduction of demands to the barest minimum. Phenomenal existence (*loka-tattva*) was here regarded not only as unimportant, but as a potential evil.

The outlook that gained currency in the wake of this influence, but at a much later period, looked upon the body as essentially an evil, a snare, a home of dirt, a habitation of the satanical forces of lust, greed, envy and wrath, by and large, it was considered impossible for soul to reach salvation until the physical body was eliminated or sufficiently weakened. But Ayurveda held that the body was the foundation of all wisdom and the source of all the supreme objectives (*dharma*, *artha*, *kāma*, and *moksha*), apart from his body there is nothing that is of help to man here or hereafter. If one does not realize the Absolute in this very body, argued Ayurveda, it is even more difficult for him to realize it when he has gone beyond the body.

The āntipathy entertained by orthodoxy towards Ayurveda must be considered in this background. And when Ayurveda had to be accommodated within the Vedic complex, *Atharva-veda* was naturally where it belonged. Charaka claims that *Atharva-veda* is superior to other Vedas as it deals with life which is the foundation of all happiness and profit,¹⁰ and this is symptomatic of the sensitivity of the medical practitioners of that period. Their affiliation to *Atharva-veda* was in the nature of a challenge, for that Veda enjoyed a dubious reputation in the orthodox circles.

Charaka's commentator, Chakrapānīdatta, boldly suggests that *Atharva-veda* itself became Ayurveda by focusing its attention on the curative aspect.¹¹ The orthodox view, however, was slightly different. Dārila-Bhaṭṭa, an early commentator on *Kauśika-sūtra* belonging to the Śaunakiya recension of *Atharva-veda*, says "There are two kinds of diseases, one kind caused by eating unwholesome food, and the other caused by evil spirits. The former are treated by Ayurveda, while the latter are dealt with in this science (viz., *Atharva-veda*)"¹²

Diseases caused by unnatural conditions

and beyond easy or precise diagnosis were generally ascribed to the wrath of spirits, infection of unwholesome elements, influence of evil forces, effect of magic, or transgression of tribal laws. The treatment of such ailments naturally involved the employment of supernatural agencies to one's own advantage. The curative procedures in *Atharva-veda* includes magical spells (*mantra*), wearing of amulets or precious stones (*manidhārana*), expiation (*prāyaścitta*), magical potions (*ausadha*), sacrifices (*balī* and *homa*), pacificatory rites (*mangala* and *svastyayana*), fasting (*upavāsa*), and pilgrimage (*ūrthayātrā*). All these have survived in India to this day, despite their rejection in the later Vedic tradition. Most of these practices go back to pre-Vedic tradition, even as the other downright occult practices.

One of the eight branches of classical Ayurveda was the treatment of ailments caused by supernatural agencies (*bhūta-vidyā*), another was toxicology (*agada-tantra*), counter-acting poisonous bites and evil influences, still another was virilification (*vājīkarana*), restoring lost or reduced vitality, by medical and magical means. These three branches belong more naturally to *Atharva-veda* than to classical Ayurveda. The other five branches, general therapeutics (*kāya-chikitsā*), surgery (*śalya-tantra*), treatment of diseases of Ear Nose Throat (ENT) (*śālākya-tantra*), were specialised in Ayurveda; they developed altogether independently of the *Atharva-veda*.

Although Indian medicine sought to wean itself away from Atharvanic practices and ideology even at an early age, it retained its Tāntrik complexion for a long time. Even classical Ayurveda accepted Sāmkhya as its theoretical basis (in both CS and SS), and Sāmkhya has been shown to be the viewpoint of the Tāntrik tradition,¹³ uncompromisingly atheistic and materialistic in its early phases at least, and therefore anti-Vedic.

We find in *Charaka-samhitā* in its present

form (C first century B C) the earlier Sāmkhya of Pañchaśikha, whereas in *Suśruta-samhitā* as redacted by Nāgārjuna (C third century A D) the Sāmkhya is of the classical type (Īśvarakṛṣṇa's). There is, in both *Samhitās*, a considerable softening of the anti-Vedic fervour and an attempt to reconcile the Sāmkhya with the general orthodox orientation. We have to note that both these *samhitās* are only reconstructions and redactions of earlier Tantras which have been lost. We can never conjecture what the orientation of these lost Tantras was like. The very expression 'Samhitā' in the works ascribed to Charaka and Suśruta betrays an anxiety to fall in line with the orthodox texts belonging to the Vedic literature. Charaka's *Samhitā* was a reconstruction of a Tantra, *Agniveśa-tantra* (as in the colophon "ityagniveśakṛte tantre Charaka-pratī-samskrte") Of the 1500 medical tracts listed in Aufrecht's Catalogue, a good many are styled Tantras *Jivaka-tantra*, *Kapila-tantra*, *Sātyaki-tantra*, *Karāla-tantra*, and so on. Even the eight branches (*aṣṭāṅga*) of classical Ayurveda were called Tantras *Śalya-tantra*, *Agada-tantra*, *Rasāyana-tantra*, *Śālākya-tantra*, *Vājikara-tantra*, etc. It is not accidental that all these were called Tantras. The belongingness of Ayurveda to the Tāntrik tradition has been consistent.

Indian medicine was actively cultivated during several centuries (seven to eight centuries according to Filliozat)¹⁴ before the birth of Christ. We have the evidence of Megasthenes, the Greek ambassador who visited India in the fourth century B C, that the Śramanas (a group of philosophers and ascetics outside the Vedic fold) were practising medicine and were greatly honoured by the people for this service. There is a suggestion in Strabo (15, 170) that these Śramanas (*pramanai*) were also magicians, giving credence to the view that Indian medicine belonged to the Tāntrik tradition.

It is customary to recognise two major

lines of development in Ayurveda, one specialising in general therapeutics (*Kāya-chikitsā*) and the other with a bias in favour of surgery (*śalya-tantra*). The two branches have much in common, and the basic theoretical framework is the same in both. The former line of development reached its culmination in the *Samhitā* of Charaka while the latter achieved its perfection in the *Samhitā* of Suśruta. These two compendia are regarded as supreme authorities in Ayurvedic theory and practice, and their authority has been unrivalled despite the numerous eminent authors who succeeded them.

We do not know for certain if they were historical personages at all. Charaka is said to be a class-name for wandering physicians who were popular even during the time of Pāṇini.¹⁵ Suśruta, which means 'learned', may not in fact be a proper name. However, Indian tradition takes them as real medical authors and they are supposed to have lived during the later Vedic period. The line of development represented by Charaka is called the Atreya school and Suśruta's school is named after Dhanvantari. We are again not sure who Atreya or Dhanvantari really was. It is helpful to follow the traditional lead. Both Charaka and Suśruta agree that Ayurveda was first formulated by the self-born Brahmā, who communicated the system to Prajāpati, and he to the twin-divinities, the Aśvins, who in their turn passed it on to Indra. The Aśvins who are regarded as the 'divine physicians' (*devānām bhishajā*) are described as having cured Indra, the mighty Vedic hero-god when he had fallen ill due to excessive Soma drinking (the ailment later nomenclatured *pānātyaya*). The 'Sautrāmanī' ritual puts the Aśvins into close relation with Indra, but otherwise their relation is not very intimate in Vedic literature.

After Indra, however, the lines branch off. On Charaka's side, Indra handed over

Ayurveda to the sage Bhāradvāja, who taught it to Atreya-Punarvasu and other sages. Atreya had six disciples: Agniveśa, Bhela, Jatūkarṇa, Parāśara, Hārīta and Kṣhārapāṇi. Each of them composed their own versions of Atreya's teaching. The first to compose his version was Agniveśa. It was Agniveśa's work, *Agniveśa-tantra*, that was reconstructed (*pratisamskrta*) by Charaka. On Suśruta's side, Indra taught Ayurveda to Dhanvantari, appearing as the king of Kāśī, named Divodāsa, and he taught the system to a group of students among whom Aupadhenava, Vaitarana, Aurabhra, Pauskalāvata, Gopura-raksita and Suśruta are mentioned. After Indra, Bhāradvāja was the founder of Charaka's line and Dhanvantari-Divodāsa of Suśruta's line. It is interesting to note that both Bhāradvāja and Divodāsa have been mentioned in *Rgveda* as contemporaries, who were "together protected" (and whose 'routes were made circular') by the Aśvins.¹⁶ This would make Suśruta an earlier authority, for Charaka was removed at least by two generations after Bhāradvāja, Atreya and Agniveśa.

It is unfortunate that all these early medical treatises have been lost, excepting Bhela's, which has survived in a single manuscript, mutilated and fragmentary. Both Bhela and Charaka rely heavily on Atreya (Atreya-Punarvasu) and claim to follow him closely. The work of Agniveśa (who was a contemporary and fellow-student of Bhela under Atreya) is no longer extant in its original form, what we have today is only a reconstruction of it by Charaka by writing the 17 sections of the Sixth Book ('Chikitsā-sthāna') as well as the remaining two books ('Siddhi-sthāna' and 'Kalpa-sthāna'), presumably planned by Charaka.¹⁷ Chakrapāṇi-datta's commentary on this work, known as *Ayurveda-dīpikā* (about A.D. 1050), is very informative. There is another commentary, written about the same time, by Śivadāsa-sena. Our knowledge of Charaka's school of

thought is principally based on the Drdhabala's redaction and Chakrapāṇi's commentary.

Likewise, Suśruta's work is no longer available in its original form. What we have is the redaction by Nāgārjuna.¹⁸ He is said to be different from the Siddha-alchemist who lived C. third century A.D. and wrote several works, *Rasaratnākara* being the well-known one. Dalhana (C. tenth century A.D.) wrote a splendid commentary, *Nibandha-samgraha* on Nāgārjuna's revision of *Suśruta-samhitā*. Dalhana mentions many previous commentators like Jaijjata, Gayadāsa, Bhāskara, but their works have been lost.

The fusion of the two lines of development was attempted by Vāgbhata (C. seventh century A.D.) who compiled his *Ashtāngahrdya* incorporating the views not only of Charaka and Suśruta, but also of Bhela and Hārīta as well as the Rasāyana system. This work gave Ayurveda its definition. If this medical school has survived as a unitary discipline and as a perfect synthesis of theory and practice, it is due mainly to the work of Vāgbhata.

Another great help in equipping Ayurveda with an excellent diagnostic tool came from Mādhava-kara (eighth century A.D.) who prepared his clinical guide-book *Rugviniścaya* (familiarly known as *Mādhavanidāna*). During the time Vāgbhata and Mādhava-kara lived, Ayurveda became highly systematised, its pharmacopoeia expanded, and treatment procedures got refined.

The system continued to grow vigorously till about the thirteenth century, since which time there has been a steady stalemate. The beginning of the thirteenth century however "marked the end of an era of growth and standardization."¹⁹ In the medieval ages, the Rasāyana system was, by a curious combination of circumstances, rejuvenated, and the drugs and remedies evolved in this system

became incorporated in Ayurveda. Ayurveda as a growing discipline appears to have lost its vitality about this period.

If Ayurveda emerged out of the Tāntrik tradition for an independent career, the alchemical systems of Indian medicine, Rasachikitsā and Siddha, continued their involvement with Tāntrik ideas. It is not easy to identify the origin of alchemical ideas in India. It is supposed that contact with China, the first home of alchemy (around third century B C), was responsible for the development of this theory-practice complex here. But the twin objectives of alchemy, namely, transmutation of base metals into noble metals (like gold and silver) and the prolongation of life by an elixir, are suggested even in the Vedic records. Alchemical ideas were prevalent here since possibly pre-Vedic times, although they did not produce a system — as they did in China, Egypt, Arabian countries and Western Europe — until three or four centuries after Christ. The use of metals, minerals, precious stones and herbs for both medicinal and magical ends was known to the poets of *Rgveda*, and to the authors of *Atharva-veda*.

Chinese influence was certainly there, especially during the early centuries of the Christian era, and Mahāchīna (the great China or Tibet) was a familiar land to the Tāntriks as well as the alchemists of India. Siddha-Nāgārjuna is supposed to have gone there, and the Tāmilian Siddha Bogar is said to have come from that country. Both of them were eminent masters of Indian alchemy, during the fourth and fifth centuries. But it would be wrong to assume that India borrowed alchemy entirely from China. It is possible that cinnabar (mercuric sulphide), on which the Chinese alchemy was based, was first discovered in India. Called *darada*, *yaśada*, or *rasa-sindūra*, it was known to the Tāntriks both in its natural mineral form and in its manufactured form.

Basic to Indian alchemy (*rasa-vāda*) is the

Siddha ideology. Siddha is an adept, a Tāntrik practitioner. *Siddhi* is achievement, and generally the expression refers to the eight-fold magical skills much as the ability to become minute like an atom (*animā*), to become excessively light (*laghumā*), to obtain everything (*īśitva*), to subdue and overpower everything (*vaśitva*), and to suppress the passions (*kāmāvasāyitva*). There is a classical list of 84 historical Siddhas, accepted by the Hindu, Buddhist, Tibetan and Nātha traditions, which became popular in the twelfth and thirteenth centuries A D. The first of these Siddhas was Matsyendranātha (Mīnanātha, or Lui-pa of the Tibetans) who is said to have lived in the ninth century, and most of the Siddhāchāryas mentioned in the list belonged to the eleventh century.

But the Siddha tradition itself dates back to a remote past, and was connected with wizards and Śamanas of the Vedic and the pre-Vedic times. The common objective of these Siddhas was the transubstantiation of the body (*kāya-sādhana*), and various methods were evolved for the realization of this objective. *Rasa-vidyā* (alchemy) was a method that was thus evolved. It was a physical process designed to make the body an efficient instrument both for material prosperity (*bhoga*) and for spiritual upliftment (*uddhāra*).

It is said that the element of alchemy was introduced into the Siddha cult by Nāgārjuna, who was himself both a Siddha and an alchemist (and his date is given as 23 A D by some authorities while others variously place him in the third, eighth or tenth century A D). There is a work ascribed to Nāgārjuna, *Rasaratnākara*, which belongs to the early strata of Mahāyāna-tantras. Another work with the same name (by Nitya-nātha) mentions that Nāgārjuna prepared this work for 'the benefit of the ailing' (*vyādhitānām hitārthāya proktam Nāgārjunena yat*). This makes clear the general orientation of Indian alchemy within the Siddha culture. There

was greater emphasis on the medical aspect rather than on material prosperity. This distinguishes the development of Indian alchemy from that of alchemy elsewhere.

In support of the superiority of this system, it is claimed that while other systems of philosophy describe the state of emancipation (*mukti*) as possible only after death of the physical body, the alchemic system advocates the obtainment of this highest state even while the physical body is functioning. Mukti in this system is a matter of direct experience, as 'a fruit held in one's own hand'. The highest purpose of alchemy, therefore, is not merely to transmute metals but to lead to emancipation by 'binding the body' (*deha-bandha*).²⁰ There is no doubt that transmutation of metals became a favourite preoccupation of Indian alchemists during the middle ages, and several works came to be written on this subject. In fact, chemistry and iatrochemistry in India developed out of this interest. But work on metals was regarded as in the nature of an experimentation, and the frequent admonition found in alchemical works is "First, test with the metals, and then, apply to the body."²¹

Mercury is an important idea in Indian alchemy. The word for it, *pārada*, signifies that it helps one to cross the ocean of transmigration.²² It is also the 'essence' (*rasa*), the 'essence of Siva's own body'²³ in particular his 'seminal essence' (*Hara-bīja* or *Siva-vīrya*), and therefore the 'great essence' (*mahārasa*). If mercury thus represents Siva (the male), sulphur represents his consort Gaurī (the female).²⁴ The creative conjunction of the male and the female was involved in the *rasa-siddhi*. Mercuric sulphide (cinnabar, *rasa-sindūra*) becomes important in this context.

Alchemists in the middle ages believed that all things in the world, especially metals, are ultimately made up of two principles: mercury (the water element, representing

fusibility) and sulphur (the fire element, representing combustibility). These two were described as male and female, and the whole world was looked upon as the result of their union. This is substantially the Śārvite Tāntrik position, and Indian alchemy is heavily oriented in favour of the male-female symbolism, and its peculiarity is that mercury, the male principle, is composed of the five primary elements.²⁵

Interesting in Indian alchemy is the preparation of a mercurial icon in the form of a phallus (*rasa-linga*), to represent the male principle of Śiva. There are elaborate instructions in texts like *Rasa-ratna-samuccaya* and *Mātrkābheda-tantra* for preparing this icon which symbolises a kind of esoteric personality involved in the rite known as 'worship of mercury' (*rasārchanā*). Usually this icon was prepared with a compound of mercury and sulphur, which was mixed with an extract of *Barberia cristata* (*jhintu*), and stirred vigorously until the proper consistency was obtained, and then it was shaped into a phallic form (*linga*), covered all over with sulphur powder, and heated slightly over a fire of cowdung so that it became hard. *Rasa-ratna-samuccaya*, composed by Vāgbhata, son of Simhagupta, gives an alternate procedure for the preparation of *rasa-linga*: gold and lead, three *nushkas* in weight, and mercury, nine *nushkas*, are rubbed with acids for three hours and the amalgam is shaped into a *linga*.²⁶ This *linga* is installed in the alchemist's laboratory (*rasa-sālā*) and worshipped for both material prosperity and immortality. This worship is said to be more efficacious than worship of *lingas* at Banaras and other holy places.²⁷

It has been pointed out that the *linga*, which is the creative emblem, is associated with mercuric sulphide (cinnabar, *rasa sindūra*). In fact, the Tamil word, *linga* means only this substance. In Chinese alchemy, this is described as a compound of *yang* and *yin* (male and female). It is interest-

ing to note that in the ceremony known as *Ashtabandha* employed in the installation of icons in temples in India, this substance is one of the eight constituents. This provides an important clue to the origin of *linga* worship in India, and the Śaivite-Tāntrik cults, that prevailed before iconic worship became accepted by the Vedic tradition, were no doubt greatly influenced by alchemic ideas, especially the male-female symbolism. The usual form that the *linga* takes in the classical period is always in conjunction with the *yonī* (female procreative organ) as the base, and the *linga* is a symbol of not only Śiva but Śiva-Śakti, the two being regarded as inseparable. The early *lingas*, however, were merely erect pillars or posts in shape (*sthānu*) symbolising the upward sperm (*ūrdhva-retas*) and the *rasa-linga* of the alchemists probably supplied the prototype.

Curious is the employment of the expression 'karma-yoga' in connection with what is known as the 'fixation of mercury'.²⁸ This yoga is said to work with mercury on the one hand, and with wind on the other, both are to be 'bound' so as to yield the desired results. The Indian alchemists speak of 'swooning of mercury' (*mūrchhana*) and 'killing of mercury' (*mārana*). The former is to transform mercury into a multicoloured substance, devoid of excessive fluidity and mobility, and the latter is to deprive mercury of wetness, thickness, brightness, heaviness and mobility. Its natural state is removed from it so that it could be ingested into the body without harm or danger. It is usual to

list 18 processes (*samskāras*) by means of which mercury is transformed into an article of utility and absorption. Mercury, when properly treated, can be assimilated into the human system and can rejuvenate it. Working with the wind means regulating the breath and suspending it (*prānāyāma*), a yogic technique. The twin techniques not only preserve the body but make it a 'glorious one' (*divya-tanu*). A 'glorious' body is the necessary precondition for 'salvation' here and now, in this very body and in this very life. It is in this sense that alchemy was considered as an adjunct of Yoga. If Yoga worked with troubles inherent to mind, alchemy dealt with the removal of the natural infirmities of the body. It is significant that Patañjali, the earliest authority on Yoga, is also considered an alchemist.²⁹

The employment of mercury for its uncanny therapeutic effect on the organic juices (*rasa*) within the body was attempted early. The word *rasa* meant not only the juices of the body which are responsible for blood and other *dhātus*, but also fluid extractions and concentrated decoctions. *Rasāyana* signifies in Ayurveda 'the way of the fluids or juices', which are effective in preventing aging and in prolonging life. In the early phase of medical thought, the fluids and juices referred to herbal extractions and mineral preparations, but in due course, they meant exclusively mercurial medicines.³⁰ Ayurveda developed the art of combining metals with herbs in the preparation of medicines, and it was known as *kalā* (*dhātvaushadhīnām samyogakriyā*)

NOTES AND REFERENCES

- 1 S N Dasgputa, *A History of Indian Philosophy* Vol II, Second impression, Cambridge The Syndics of the Cambridge University Press, 1952, pp 280 81
- 2 K N Sastri, *New Light on the Indus Civilization*, Vol II, Delhi, Atma Ram & Sons, 1965, p 67
- 3 On *Manu*, 2,1 (He calls them Śruti)
- 4 *Rgveda*, 2,33,4
मा त्वा रुद्र चक्रधामा नमोभिर्मा दुष्टुती वृषभ मा सहूनी ।
उन्नो विरमपर्य भेषजोभिषक्तम त्वा भिषज शृणोमि ॥
- 5 *Ibid*, 10,39,3
अमाजुरादभवथा युव भगोऽनाशोऽश्विद्वितारापमस्य चित् ।
अन्धस्य चित्रासत्या कृशस्य चिद्युवामिदाहृभिषजा रुतस्य चित् ॥
- 6 *Taittiriya — Samhitā*, 6,4,9
तौ देवा अनुवन् अपूतौ वा इमौ मनुष्यचरौ भिषजाविति ।
तस्माद्ब्राह्मणेन भेषज न कार्य, अपूतो ह्योपोऽमेध्यो यो भिषक् ॥
- 7 न मासभक्षणे दोषो न मद्ये न च मेथुने ।
प्रवृत्तिरेषा भूताना निवृत्तिस्तु महाफला ॥
- 8 *Bhela-samhitā*, Chikitsāsthāna, 30
- 9 आयतन विद्याना मूल धर्मार्थकाममोक्षाणा ।
श्रेय पर किमन्यत् शरीरमजरामर विहायेक ॥
अस्मिन्नेव शरीरे येषापरमात्मनो स वेद ।
देहत्यागादूर्ध्वं तेषा तद्ब्रह्म दूरतरम्
- 10 *Charaka samhitā*, 1,1,42
- 11 अथर्ववेदस्य आयुर्वेदत्वमुक्तं भवति ।
अथर्ववेदेकदेश एवायुर्वेद ॥
- 12 Dānla-Bhatta, on *Kausika sūtra*, 25,2
द्विप्रकार व्याधय अहारनिमित्ता अशुभनिमित्ता चेति ।
तत्र आहारसमुत्थाना वेपथ्य आयुर्वेद चकार
अघर्मसमुत्थाना तु शास्त्रमिदमुच्यते ॥
- 13 Deviprasad Chattopadhyaya, *Lokayata, A study in Ancient Indian Materialism*, New Delhi, People's Publishing House 1959, p 360
- 14 J Filliozat, *The Classical Doctrine of Indian Medicine*, Delhi, Munshiram Manoharlal 1964, p 194
- 15 For he has a special sutra कठचरकाल्लुक् (४, ३, १०७)
- 16 *Rgveda*, 1,116,18,
याद्यात दिवोदासाय वर्तिर्भरद्वाजायाश्चिन्वा हयन्ता ।
खेदुवार सचनो रथो वा वृषभश्च शिशुना मारश्च युक्ता ॥
- 17 तत्रेतान् कपिलवल्ल शेषान् दृढबलोऽकरोत् ।
तन्त्रस्यास्य महार्थस्य पूरणार्थं यथायथम् ॥
- 18 उपदिष्टा तु सम्यग् धन्वन्तरिमहर्षिणा ।
सुश्रुताय सुशिष्याय लोकाना हितवाञ्छया ॥
सर्वत्र भुवि विख्याता नाम सुश्रुतसहिता ।
आयुर्वेदयत्रयीमध्ये श्रेष्ठा मान्या तथोत्तमा ॥
सा च नागार्जुनेनैव ग्रथिता ग्रन्थरूपतः ।
- 19 D M Bose et al *A Concise History of Science in India*, New Delhi, Indian National Science Academy, 1971, p 262
- 20 Cf Mādhava's *Sarvadarśana-samgraha*, 'Raseśvara darsana' 8
न च रसशास्त्रं धातुवादार्थमेवेति मन्तव्यं, देहबन्धद्वारा
मुक्तेरवपरमप्रयोजनत्वात् ॥
'Dehabandha' is in imitation of 'rasabandha' (fixation of mercury by destroying its fluidity)
पूर्वं लोहे परिक्षेत, पददेहे प्रयाजयेदित ।
यथा लोहे तथा देहे कर्तव्य ।
- 22 *Rasārṇava*
पारदो गदितो यस्मात्परार्थसाधकोत्तमे ।
रसस्य पारदत्वं ससारप्रापणहेतुत्वात् ॥
- 23 *Ibid*
मम देहरसो यस्माद्रसस्तेनायमुच्यते ।
- 24 अभ्रकस्तव वीजं तु मम वीजं तु पारदं
अनयोमेलनं देवि मृत्युदारिद्र्यनाशनम् ॥
- 25 *Ibid*
पञ्चभूतात्मकं सतस्तिष्ठत्येव सदाशिव ।
- 26 *Rasa-ratna samucchaya* 6, 16
निष्कत्रयं हेमपत्रं रसेदं नवनिष्ककं ।
अम्लेन मदयेद्याम तेन लिङ्गं तु कारयेत् ॥
For the other method, cf D M Bose et al, op cit
- 27 काश्यादि सर्वाल्लिङ्गोभ्यो रसलिङ्गार्चनं शिवं ।
प्राप्यते येन तल्लिङ्गं भोगारग्यामृतामरम् ॥

28 *Rasārṇava*

कर्मयोगेन देवेशि प्राप्यते पिण्डधारणम् ।
 रसपवनति कर्मयोगो द्विधा स्मृत ॥
 मूर्छितो हरति व्याधीन् मृतो सजीवयति स्वयम् ।
 बद्ध खेचरता कुर्याद्रसो वायुश्च भैरवि ॥
 नानावर्णो भवेत्सूतो विहाय घनचापल ।
 लक्षण हन्यते यस्य मूर्छितं तं वदन्ति हि ॥
 आर्द्रत्वं च घनत्वं तेजो गौरवचापल ।
 यस्यैतानि न दृश्यते तं विद्यान्मृतसूतकम् ॥

- 29 Ś vadāsa in his commentary on Chakrapāṇi datta, he speaks of Patañjali not only as an authority on *lohasātra* but as a redactor of *Charaka-samhitā* Chakrapāṇi's *Āyurveda-dīpikā* has this verse
 पातञ्जलमहाभाष्यचरकप्रतिसंस्कृते ।
 मनोवाक्कायदोषाणां हन्त्रेऽहिपतये नमः ॥

Laghumañjūsa of Nageśa-bhatta quotes a statement of Patañjali from his 'work on Charaka' Śivarāma's Commentary on *Vāsavadattā* has preserved a verse from Bhoja

योगेन चित्तस्य पदेन वाचा
 मलशरीरस्य च वैद्यकेन
 योऽपाकरोत प्रवरमुनीनां पतञ्जलिरान्तोऽस्मि ॥

There is also an attempt to identify Patañjali with Charaka

30 For instance in *Bhāvaprakāśa*

रसायनाधिभिलोकैः पारदो रस्यते यत ।
 ततो रस इति प्रोक्तः
 स च धातुरपि स्मृतः ॥

Definitive treatises of major authors
Popular Manuals
Physicians' Hand-books
and Materia Medica
(alphabetically arranged)

A

Agniveśa • It was Agniveśa's 'Tantra' as redacted by Charaka that became celebrated as *Charaka-Samhitā*. The usual descriptive title in the colophon of the chapters of CS, is "in the Tantra composed by Agniveśa, and redacted by Charaka" (Agniveśa-krte tantre Charaka-prati-samskrte)

He was, according to CS, the foremost in brilliance among the disciples of ATREYA (-PUNARVASU), and the first to prepare the compendium of the master's teachings ("buddher viśeṣas-tatrāsīn no'padeśānt-aram muneh, tantrasya kartā prathamam Agniveśas tato' bhavat", I,1) SS also counts him first among the authorities in therapeutics (kāyachikitsā), according to DALHAṆA (shaṭṣu kāyachikitsāsu Agniveśa — Bheḍa — Jatukarṇa-Parāśara-Hārīta-Kshārapāṇi- proktāsu' NīS,6,1)

He was an ancient sage, who has been mentioned in Mahābhārata as BHARADVĀJA'S student and as Droṇa's teacher. Son of Agni, he was also known as Hutāśa (Hutāśa itī Agniveśa-sambodhanam, VyMk). He learnt medicine from Ātreya and crystallized the Ātreya tradition of general therapeutics.

That there was an *Agniveśa-tantra* which survived as such, even after Charaka redacted it in the shape of CS, becomes evident by the citation of some verses from the former which are not found in the latter, by SRIKANTHA-DATTA (a student of Vijaya-rakṣita c A D 1239) author of *Vyākhyā-kusumāvalī* (c A D 1288) a commentary on *Siddhayoga*. It appears to have been inde-

pendently available during Chkp's days. But it is now lost.

Two other works are ascribed to Agniveśa (1) *Añjanā-nidāna*, (235 verses) dealing with the diseases of the eye, which is quoted by VAGBHATA, TĪSATA and RUDRA-BHATTA, and (2) *Nidāna-sthāna*, a work on pathology. But the ascription is not confirmed.

Some formulae for medicated preparations from clarified butter (ghṛta) are ascribed to him: Chāṅgeri-ghṛta, Vāsādyā-ghṛta, Tiktaka-ghṛta, Chāvyadi-ghṛta, Tryushanadya-ghṛta, and Shatpala-ghṛta.

Alam̐bāyana An ancient physician of uncertain date, he was reputed as an authority in toxicology. He is said to have classified poisons into five classes (pañcha-visha). His views are cited in later medical commentaries such as Vyāk and NīS.

Alchemy. Alchemy is a practical inquiry into the *materia prima*, the fundamental substance, which can be pressed into gain, like manipulation and transmutation of base metals into the most sacred and precious among metals, viz, gold. The recovery of the basic material substance as well as its employment for transmutation involves elaborate chemical processes, which are secretive for an alchemist and mysterious for the layman. But there is also a spiritual framework for this secret art, as we find in the early Taoist texts of China, where probably alchemy originated.

The *materia prima* is regarded as dual in its composition: male and female, represented by mercury and sulphur, opposite in effect, but uniting to generate a psychic energy. Exploitation and application of this energy make for the adamantine constitution (vajra-deha). Alchemy was reinterpreted as the technique of transforming base physical body into an invulnerable 'divine' body.

Alchemy was a persistent, if also hazard-

ous, preoccupation among Arabs, Chinese and Indians during the Middle Ages. The word derived from the Arab *al-khumia* ("of the land of Khem or Black Earth", viz., Egypt) signified an Egyptian art. Egyptians are supposed to have practised the art several centuries before Christ, but definite historical evidence suggests that Chinese were the pioneers. The founder of Chinese Alchemy was Tsou-yen (4th century B C), although the first reference to the art occurs only in 144 B C. Arabian alchemy was founded by Jabir-ibn-Hayyan about A D 760. European alchemy gained ground only in the 16th century.

It is generally thought that Arabs introduced alchemy into India, but we have numerous earlier references to alchemic ideas and practices before the eighth century. The BOWER MSS (4th century A D) mentions mercury, the *Avatamsaka-sūtra* refers to *hātaka* ('the drug juice'), one measure of which could transmute a thousand measures of bronze into pure gold, *Prajñā-pāramitopadeśa* (translated into Chinese by Kumāra-jīva in A D 402-405) prescribes drug and incantation to change bronze and silver into gold. Nāgārjuna's name (early centuries of our era) is associated with alchemy (See NAGARJUNA).

Even Chinese alchemy was acquainted with Indian techniques of 'esoteric' alchemy. Chinese alchemy was concerned with prolongation of life and happiness, in addition to transmutation of metals. The emperor Tai-tsang patronized an Indian alchemist, Nārāyana-svāmī by name, who had been brought to China by Wang Hsuan-tse in A D 648, this alchemist has been described as an adept in the art of prolonging life. Another emperor, Kao-tsung, commissioned in A D 664-665 a monk (Hsuan-chao) to visit Kashmir and bring the alchemist Lokāditya, who was also skilled in prolonging life. It was probably owing to the contact with Indian alchemists that China made a clear

distinction between 'exoteric' and 'esoteric' alchemistries.

But it cannot be denied that both the Chinese and Arabian influences on Indian alchemy were great around and after the 10th century. Impact of Chinese alchemy must have been earlier, for there are many typically Chinese ideas incorporated into the Yoga and Tantra cults, especially in Bengal, Assam and the Himālayan foothills.

Indian alchemy was essentially esoteric, although the exoteric ideas (transmuting baser metals into gold) were not infrequent in the earlier phase of its development. The word for alchemy in India, *rasāyana*, suggests that the main technique was the production of *rasa* to prolong life and restore youth. Although *rasa* in due course meant gold, and later mercury, the *rasāyana* that earlier medical writers like Charaka knew, was purely herbal. We have the testimony of al-Beruni, "It (*rasāyana*) means an art which is restricted to certain operations, drugs, and compound medicines, most of which are taken from plants. Its principles restore the health of those who were ill beyond hope, and give back youth to fading old age." (*al-Beruni's India*, tr. ed. C. Sachau, I, p. 188) (See RASAYANA).

However, *rasa* also meant gold, which was tantamount to 'immortality' (*amrtam āyur hiranyam*). In the alchemy of all countries, gold is an imperial and perfect metal, which does not naturally discolour or decay, it is associated with the sun and hence is the equivalent of spirit. In China, gold and jade were plugged to the nine orifices of the dead body to preserve it from putrefaction. But the gold that was prepared by alchemical process was deemed to be more effective than the natural metal. The basic idea was that bronze hidden under the earth would be transformed into gold by the natural passage of time, but the time required for this transmutation would be very long indeed. Alchemy, however, would quicken this process, and endow on

the metal certain magical properties

Rasa thus came to mean the elixir of immortality and also possession of supernatural powers (siddhi), like flying through the air, seeing through opaque bodies, acquiring a body of glory (divya-deha), and transmutation of substances (like stone and metal) into gold. Nāgārjuna, the perfect model of a siddha (alchemist), is said to have produced a mountain of gold during a famine, so that people could buy food-grains from foreign lands.

But the preparation of gold in the early stages involved herbal articles and not mercury. Merutunga (around 1386), for instance, mentions that a lump of copper smeared with the juice of a creeper and heated would become gold (*Prabandha-chintāmani*).

At a later date, rasa came to signify metals, in particular mercury (often regarded as mahā-rasa, rasa-rāja or rasendra), the proper name for which was 'pārada', ("that which secures the beyond"). It was so called because it would enable one to go beyond the woes of life. The expression rasa was applied to it because it could liquefy all metals (rasanāt sarva-dhātūnām) and transform them. Mercury (Hg or Hydrargyrum, the heavy silver-white liquid metal also called quicksilver), as is well known, can absorb other metals forming amalgams. It was commonly obtained by sublimation from cinabar (*darada, hingula*), its important ore.

Preparation of mercury and transmutation of metals became a favourite preoccupation of ascetics of the Nātha-siddha sect and several tāntric cults, in order to prolong their lives and preserve their bodies in perfect health. A whole school of philosophy (Raseśvara-darśana) developed on the basis of their ideas and practices. The philosophy is included among the major schools of thought in *Sarva-darśana Samgraha* (14th century). Liberation from the snares and sorrows of life (*mukti*) was dependent upon

spiritual practice, which in its turn depended upon a strong body and long life. Mercurial preparations, which are capable of securing strength as well as longevity, came to be regarded as necessary props of spiritual discipline.

Involved in this philosophy was the idea of spiritualization of the body. *Rasārṇava*, an important source book, recommends restraint of breath (vāyu) as well as application of mercury to make the body adamant and productive of liberation while one is still alive (jīvan-mukti). Mercury thus became the elixir of immortality and panacea for all ills, the goal which the ascetics pursued diligently.

It is said that the calcination of mercury and the pharmaceutical preparations were learnt by the Indians from the Arabs. But we do know that Indians were experts in several techniques relating to mercury around the tenth century. Marco Polo relates that the Indian ascetics (chugchis), who lived to be 150 or 200 years, drank twice a month a "strange beverage, a potion of sulphur and quicksilver mixed together" (*The Book of Ser Marco Polo*, Sir Henry Yule, p. 365). F. Bernier records that Indians prepared mercury so admirably that just a grain or two of it taken in the morning would restore the body to perfect health.

The aspect of Indian alchemy that survived was the therapeutic one (rasa-chikitsā). It was claimed that whatever disease of man, horse or elephant (nara-kuñjara-vājinām) is incurable (asādhyam, nāsti kiñchit chikitsitam) is easily cured by mercury (rasendra) (*BP*, I, I.). The other aspect (dhātu-vāda), dealing with the transmutation of baser metals into gold, fell into disrepute and disuse. It may be recalled that mercury (a preparation or a compound) was not used in Western medicine until 1699. [See THE RASA SCHOOL OF MEDICINE]

Arabian Medicine : The nature of indigen-

ous medicine in Arabia, before the impact of Greek medicine, is obscure. But Arabian medicine that is known to the world, and that contributed considerably to the crystallization of European medicine, was essentially Greek, principally in its Alexandrian version.

Ptolemy's establishment of Alexandria in Egypt as a Greek stronghold around 287 B C not only helped the cause of expansion of Greek culture in all its aspects, but served to provide an opportunity for Greek talent outside Greece (which was fast fading in her glory and power). Alexandria attracted the best of the Greek physicians.

It would not be correct to describe medicine in Alexandria as a mere continuation of the Hippocratic medicine of Greece. Alexandrian physicians and surgeons made a positive advance over their Athenian predecessors. Not only were their writings more numerous, they were also more methodical, empirical and rational.

The Alexandrian chapter of Greek medicine was inaugurated by Herophilus of Chalcedon around 300 B C. He accepted the Hippocratic theory of four humours, the Greek anatomy and pulse examination. But another Greek who was associated with the stabilization of the Alexandrian school, Erasistratus of Chios (around 290 B C), who was a physician as well as a surgeon, challenged the Hippocratic theory, and thus paved the way for a new line of development.

The medical school in Alexandria was dominated by the 'empirical' outlook represented by Serapion of Alexandria (220 B C). 'Empirical' meaning experiential, from 'empeiria' (experience), the school emphasized the approach to treatment by way of observation of symptoms (*autopsy*), consultation of the records and the experiences of other physicians (*historia*), and trials based on one's own experience and the experience of others (*peria*).

However, the Alexandrian interlude was

short-lived. It drew to a close when during the days of the last Ptolemy, Ptolemy Physcon (145-116 B C), the power of Alexandria weakened. The excellent library of Alexandria was destroyed when the armies of Julius Caesar (48-47 B C) attacked the town. The physicians, surgeons, medical writers and translators lost their main academic prop. When Roman ascendancy was felt in Egypt, Alexandrian medicine shifted its base to Rome. Medicine, became Graeco-Roman in outlook during the first century A D.

The second century saw the rise of Claudius Galen (A D 131-201), the medical genius. He had studied in Alexandria, and travelled in Greece before he settled down in Rome around A D 162. He was physician royal to the Antonine emperor, Marcus Aurelius (A D 161-180). He wrote as many as 500 treatises on medical subjects, and became an authority for well over a thousand years. Besides his contributions to experimental physiology and anatomy, his theory of the three-fold *pneuma* (spirit) became celebrated.

The *pneuma* was constantly renewed in the body from breathing the air through the lungs and sucking it through the skin-pores. This constant renewal made possible the continuance of vital functions. He distinguished between the 'natural' *pneuma* (located in liver and distributed all over the body through veins), the 'vital' *pneuma* (located in the left ventricle and distributed through the heart and the arteries) and the 'animal' *pneuma* (located in the brain, and distributed through the nervous system), which together constituted the foundation for the physiological system.

Despite his contributions to medical theory, his therapeutics was closely modelled after Hippocrates. A combination of Galen's theory and Hippocratic practice became the essential framework of Arabian medicine, when after the collapse of the Roman empire, physicians and surgeons first flocked

in Constantinople and then spread to Mesopotamia, Persia and Arabia

The immediate background for Arabian medicine was in Persia, where the Nestorians (East Syrians) had established the Greek medical theory and practice. Nestoris, the Syrian monk who was the patriarch of Constantinople and had begun translating Greek works into Syriac, fled in A D 428 to Persia to escape persecution. The Nestorian school of Edessa inherited and represented the Hippocratic tradition as redacted by Galen. The Nestorians were Greek enthusiasts.

This school ceased to function around A D 480 when the political atmosphere became intolerable, and the medical experts moved over to Jundi-Shapur, which was another centre for medical education. Medical writers and translators who contributed to the celebrity of this centre were in course of time attracted to Baghdad, when Abdulla-Abul-Abbas inaugurated the Abbasid Caliphate (also known as the Eastern Caliphate) there in A D 750. It was the second Calipha Al-Mansur Abu Jafer, who founded the city of Baghdad and established a medical centre there on the lines of the Jundi-Shapur centre. He was an admirer of Persian culture, and encouraged Christian physicians.

During the rule of the three Caliphas (Al-Mansur, Harun-ul-Rashid and Al'A-Min) Baghdad became a famous centre for physicians and surgeons. Translations of Greek classics like *Corpus Hippocraticum*, Graeco-Roman manuals like Galen's works, and Sanskrit medical works (like *CS*, *SS*, *MN*, *AS*, *AHr*) were carefully done into Arabic, and the translators included Syrians, Hebrews and Persians.

Among the translators, Jurjes, Yuhanna (A D 777-857, also known as Janus Damascenes) and his student Abu-Sayad-Hunayn (A D 809-877 Johannitius) were celebrated for their extensive, meticulous and excellent translations of the classics into

both Syriac and Arabic. The last, in fact, has been hailed as the 'Erasmus of the Arabian renaissance'.

The translations paved the way for the rise of that remarkable 'prince among Arabian physicians', Abu-Bakr, Md'-ibn-Zakaria-al-Raze, more famous as Rhazes (865-925), who attempted an integration of Hippocratic practice with the theoretical innovations of Galen. He studied in Baghdad and became renowned by his encyclopaedic work *Al Hawi (Liber continens)*, a compendium of Graeco-Arab medicine principally following Galen but incorporating numerous details from Indian medical texts. He quotes from *SS* often, and his teacher al-Tabbari, quotes both *CS* and *SS* in his *Paradise of wisdom (Firdaus-al Hikamat)*. Rhazes was well known for his studies on the effect of mercury on human body, and for his work on small-pox and measles.

A short work of his, *Ber-us-sa-aw (Cure in an Hour)* in 24 short sections, is an interesting book of quick remedies for diseases of the head upto those of the foot, the first section deals with headache, and the last with weariness.

A Persian, Ali-Abbas, wrote *Al-Malik*, a medical treatise meant for the princes, in two parts and 20 chapters. It was a comprehensive work on all aspects of medicine. The first part deals with theoretical matters and the second with practical. The book was regarded as an authority for over a hundred years. It was translated into Latin by Constantinus Africanus in A D 1078.

The next great name in Arabian medicine is also the greatest of names. Avicenna (whose full name was Hussein-bin-Abdullah-Hassan-bin-Ali-ibn-Sina, A D 980-1038, who by all standards was the greatest medical writer in the medieval world. He wrote as many as 165 works in Persian and Arabic, he was also a poet of no mean merit. His *al-Qanoon (The Canon, or The Medical Principles)* in 5 sections marked

the final phase of what may be styled Graeco-Arabic medicine. He represented a completely rational approach to medicine, rejecting the value of astrology altogether. His works indicate a fairly intimate acquaintance with Indian medical writings.

The outlook crystallized by Avicenna was further defined by Avenzoar (Abu-Merwan ibn-Zhor, A.D. 1113-1162) and Averroes (1126-1198) who were among the most prominent medical writers in what is called Moorish Spain. The latter's *Colliget* in 7 sections is a comprehensive treatise of Graeco-Arabic medicine.

Medicine in Arabia made significant contributions in the field of ophthalmology, especially with regard to cataract, and also in chemistry and alchemy. The name of Abu-Musa-Jabir ibn-Hayyan (722-803), familiarly known as Geber, is prominent as the pioneer alchemist in that part of the world. Several new chemical drugs like sulphuric acid, nitric acid, potassium and myrrh as well as many narcotic drugs like opium, belladonna, hyoseymus and mandagoras were introduced by the Arabian chemists and alchemists who worked in close collaboration with physicians and surgeons.

The impact of this system of medicine was felt in Afghanistan, Central Asia and also in India. It entered India around A.D. 711 and since then it has influenced to some extent the indigenous system of medicine. And it underwent a change in India, leaning considerably on Āyurveda. The *Yunāni* system that is prevalent in India now is a blend of the Graeco-Arabic medicine and Āyurveda. [See YUNĀNI SYSTEM]

Aruna-Datta Author of *Sarvāṅga-Sundara*, a comprehensive commentary on VAGBHATA'S *AHr*, he is also said to have written a gloss on *SS*, which is no longer available.

Son of Mrgāṅka-datta, he is assigned to about A.D. 1220 by Hoernle and Gn Sen

HEMADRI, another commentator on *AHr*, cites him (See SARVĀṅGA-SUNDARA)

Ashtāṅga-Hṛdaya One of the most celebrated and most often studied treatises on Indian medicine, and after *CS* and *SS* the most authoritative. Written by VAGBHATA, it was in the nature of a summary of his earlier and more elaborate work *ASHTANGA-SAMGRAHA*, which is described as *Brhad Vagbhata* ('Elaborate V') in contradistinction to this work, which is *Laghu-V* ('concise V').

Unlike *AS*, this work is entirely versified, the verses often reminding one strongly of the verse-portions of *AS*. There is a fair degree of correspondence and style between *AS* and this work, although the former is more faithful to *CS* and *SS*. Both the works of VAGBHATA exclude altogether the philosophical discussions that we find in *CS* and *SS* (*Sāṃkhya* and *Nyāya*) as well as matters of spiritual discipline (*yoga*). They are strictly rational treatises, and deal exclusively with the principles and practice of medicine.

The purpose of the treatise appears to be to bring together the relevant medical knowledge contained in *CS* and *SS*, for there was already a cleavage between the two traditions, therapeutic and surgical. There is an explicit injunction (utt, 40,84) that neither *CS* nor *SS* should be studied and relied upon exclusively, the two must judiciously be combined by the practising physician.

While integrating the teachings of *CS* and *SS* in one work, the author has also incorporated the pertinent prescriptions of different medical authorities like *BHĒLA*, *HARĪTA*, *NIMI*, and *KASYAPA*. The work significantly begins with an aphoristic preface: "What follows is what was said by great sages, Ātreya and others" (iti ha smāhur Ātreyaḍayo maharshayah, 1,1,2). And tracing the origin of Indian medicine to Brahma, and its subsequent proliferation through Prajāpati-Asvins-Indra-Atriṣṭra

(Ātreya) and other sages — Agniveśa and others who prepared their own medical texts, the author mentions that medical knowledge became 'exceedingly diffused' (*atī-viprakīrṇa*), and he sets out to cull out the most essential aspects of all these diversified teachings (*sāra-tarocchayah kriyate*) in this work, which would be neither too concise nor too prolix (*nāti-saṁkṣhepa-vistaram*, v 5)

There is an intriguing statement at the end of the work (utt , 40, 88) which suggests that Charaka and Suśruta are studied although they are not 'ancient sages', because their works are 'fine writings' (or helpful treatises), while the writings of 'sages' (like Bhela) are ignored, although people normally love to study the works of sages (*rshi-praṇīte prītiś chen muktavā Charaka-Suśrutau, Bhelādyāh kim na pathyante tasmād grāhyam subhāshitam*) Here is the suggestion that neither Charaka nor Suśruta was considered as an ancient personage during Vāgbhata's days, but both of them appear to have dominated the medical scene, pushing the 'sages' into oblivion What matters, therefore (according to Vāgbhata), is relevance, and not mere antiquity

This work follows the general plan of *AS*, and is divided into 6 books (*Sthānas*) and 120 chapters in all Bk 1 (*Sūtra-Sth*) 30 chapters, Bk 2 (*Śārīra-Sth*) 6 chapters, Bk 5 (*Kalpa-siddhi Sth*) 6 chapters, Bk 6 (*Uttara-Sth*) 40 chapters (See ASHTANGASAMGRAHA for content analysis)

That the book is merely an abridgement of *AS* is stated by the author himself (*Utt Sth* , 40,80) "The *AS* was prepared from the eight-fold medical lore, as ambrosia was obtained from churning the great ocean Then, in order to help the students incapable of great effort, this short treatise (*tantra*) was separately prepared on the basis of that elaborate work (viz , *AS*, *tasmāt*)" Again, the last verse of the work explains that this work is called the "Heart" (*hrdayam etat*) in the

sense of essence or core (*hrdayam iva*) of all the Ayurvedic lore (*ibid*, v 89)

The work probably crystallized for the first time the concept of three doshas in Indian medicine, although the thought-structure is as old as *RV*, and both *CS* and *SS* formulate elaborate theories pertaining to it This work gives, at the very commencement, a clear and simple framework for the dosha-concept as involved in disease and medicine (*Sū Sth* , I,6-12) The relationship between the six tastes (*rasa*) and dosha in treatment is also mentioned (*ibid*, v 15-16)

It is probable that the author was connected with some royal court (although not the court of Bhoja in the 11th century as Cordier suggests), for he discusses in great detail the functions of a royal physician who is called 'the custodian of life' (*prāṇāchārya*) and whose duties are meticulously enumerated

Although a Buddhist in general outlook, VAGBHATA freely recommends meat (including beef) as an article of food (*Sū Sth* , Ch 6) and extols the merits of alcoholic liquors (*ibid*, 5,62, ff *madya-varga*)

The work is devoid of references to opium, pulse-examination and metallurgical preparations Mercury is mentioned in passing Mineral and natural salts are involved in prescriptions

In the Tibetan Canon, Tan-gyur (about 8th century), is included a translation of this work, along with those of *CS* and *SS* (Csoma de Kóros) It was also translated into Arabic about the same time under orders from the Baghdad Caliphas It is translated into German by LUISE HILGENBURG and WILIBALD KIRFEL (BRILL, LEIDEN)

Among the early editions of this work are by ANNA MORESHWAR KUNTE (1880), JIBANANDA VIDYASAGAR (1882), GANESH SAKHARAM SARMA (1889), KAILASH CHANDRA SENGUPTA (1890), G K GARDE (1891), and SHANKAR DAJI SHASTRI PADAY

(1900 Nirṇaya Sāgar)

This work has as many as 37 commentaries, the largest number for any early medical classic. The earliest extant among them is also the most illuminating and most often printed, *Sarvāṅga-Sundarā* (or *Sundarī*) by ARUNA-DATTA (about A.D. 1200) (ed. by VIJAYA RATNA SEN-GUPTA, Calcutta, 1888 and ANNA MORESHWAR KUNTE, Bombay, 1889). There are references to the commentary of JAIJJATA, who is reputed to be VAGBHATA'S own student, but it has not come down to us.

HEMADRI'S *Āyurveda-Rasāyana* (between 1271 and 1309) is another celebrated commentary on this work (ed. by HARI-SASTRI PARADKAR, Nirṇaya Sāgar, Bombay, 1939). It contains only Sūtra-Sth and Kalpa-Sth completely and some portions of Nidāna-Sth and Chikitsita-Sth.

Other commentaries either still in Mss, or known only in references include CHANDRA-NANDANA'S *Padārtha-Chandrīkā* (Aufrecht, Mss. with HARI-SASTRI PARADKAR, quoted by DALLHANA and HEMADRI and anterior to 10th century), ASADHARA'S *Uddyota* (about 1240, not available), TODARA-MALLA'S *Manojñā* (c. 1556-1605), DAMODARA'S *Sanketa-mañjarī*, *Hṛdaya-prabodhikā* (Burnell) and *Pathya*.

There is a compilation of drugs mentioned in this work, giving also synonyms, *Ashtāṅga-Nighantu*, of uncertain date. It contains a Telugu gloss. Another compilation of technical terms used in this work is *Ashtāṅga-hṛdaya-kosha* by Valapad K.M. Vaidya (1936).

Ashtāṅga-Samgraha A voluminous and comprehensive medical treatise, included in the 'Big Three' of Indian medicine (Vṛddha-trayī, the other two being CS and SS), prepared by VAGBHATA, referred to as Vṛddha-Vāgbhaṭa on this account.

The work which proposes to deal with the 8 divisions of medicine (ashtāṅga) is in

6 books (Sth) and 150 chapters (adhyāyas). Bk 1 (Sū Sth) 40, Bk 2 (śārīram) 12, Bk 3 (Nidānam) 16, Bk 4 (Chikitsitam) 24, Bk 5 (Kalpa-siddhi) 8, and Bk 6 (Uttara-Sth) 50. It is the last Bk that justifies the title of the work, for the rest of the work deals mainly with but one division of medicine, viz., therapeutics (kāya-chikitsā) and briefly about surgery (śalya). It is miscellaneous in nature and deals briefly with the other 6 divisions.

The first chapter (named āyushkāmiya, 'longevity and how to attain it') gives the content of the entire work, and specifies the number of books and chapters ('adhyāya-samgraha').

Bk 1 (40 chapters) is an excellent introduction to the subject, dealing with health, long life, the source of ailments, food, seasonal requirements, daily conduct, personal hygiene, the nature and classification of drugs, the importance of taste (rasa), the doṣhās, the therapeutic procedures, surgical operations, and blood-letting by leeches.

Bk 2 (12 chapters) treats of human anatomy, pregnancy, difficult labour, complications, classification of individuals, and prognostic aids.

Bk 3 (16 chapters) is pathology and diagnosis. Several diseases like fever (jvara), haemorrhage (rakta-pitta), asthma (śvāsa), phthisis (yakshma), alcoholism (madātyaya), haemorrhoids (arśa), diarrhoea (atisāra), urinary disorders (prameha), abscess (vidradhi), abdominal disorders (udara), anaemia (pāṇḍu), skin diseases (kushtha), and diseases of the nervous system (vāta-vyādhi) are considered in detail with regard to their pathological conditions.

Bk 4 (24 chapters) elaborates the treatment procedures for the diseases dealt with in the previous Book. Several other variant diseases like tumour (gulma), inflammation (śopha), erysipelas (visarpi) and leucoderma (śvitra) are spelt out, and treatment is prescribed.

Bk 5 (8 chapters), the shortest of the Books, deals mainly with emesis (vamana) and purgation (virechana). Complications of *basti* are also considered. The last chapter (called *dravya-kalpa*) describes the suitable drugs and the manner of their collection.

Bk 6 (50 chapters) is the most elaborate one in the work although it occurs as the supplementary section. It constitutes about one third of the entire bulk. The author points out that this portion of the book is meant to 'complete the requirements of the octopartite medicine' (*ashtanga-pūrnah*, v 66). Diseases of children (*paediatrics*), treatment of insanity and epilepsy, diseases of eye, ear, nose, mouth and head, toxicology, rejuvenation, aphrodisiacs are treated in this book, thus covering the 6 divisions which are not dealt with in the rest of the work. Minor ailments and management of wounds and ulcers are also considered. New material is to be found here, gathered from different sources, besides *CS* and *SS*.

The work is a compilation (*saṃgraha*) of information, explanations and prescriptions to be found in *CS* and *SS*. There is little that can be described as original. But the value of the work is undoubtedly great, for it has neatly collected the essential details from the two classics, which are to an extent rambling and discursive. The student would find it helpful.

The work has prose passages interspersed with verses, the latter to be met with also in *AHr* almost in exact correspondance. The work begins with a prayer addressed to the Buddha (*Buddhāya tasmai namah*). Indebtedness to *CS* and *SS* is obvious and immense, although there is considerable original matter that can supplement *CS* and *SS*.

Tracing the origin and development of Indian medicine in its 8 divisions (*Kāya-Bāla-Graha-Ūrdhvāṅga-Śalya-Damshtra-Jarā-Vrshah-gatam ashtāṅgatām*), the author describes how the medical works were composed by sages like *AGNIVESA*,

HARĪTA, *BHEDA*, (*BHELA*), *MANDAVYA*, *SUŚRUTA* and *KARALA* representing the major divisions. Each of these, however, was not comprehensive (*teshām ekaikam avyāpi*) and therefore incapable of curing all diseases (*samasta-vyādhi-sādhane*, 1,1,15). Should one decide to study all these treatises, a life-time would pass only in study (*purushā-yusha-saṃkshayah-bhavaty adhyayane-naiva*)¹ It is for this reason that the author has prepared this treatise, compiling from all the treatises the essential details, without irrelevant matter, unnecessary elaboration, repetition and other defects (*sarva-tantrany atah prayah saṃhrtyashthanga-saṃgrahah, asthana-vistara-kshepa-punaruktādivar-jitah*, *ibid*, p 18).

For the first time in Indian medicine, astrological ideas are sought to be involved in medical practice, however faintly. Diseases which originate during different stellar conjunctions- (*nakshatre vyādhir utpannah*) are said to have different courses, according to the sage *Hārīta* (*ity āha Hārītah*), and details of this are cited (*Nidāna Sth*, 1, vv 21-32 at the end of "*sarva-roga-nidānam*") The idea is neither elaborated nor made much of.

AS claims to follow the general framework provided by *CS*, viz., the three-arms of medicine: causation, symptomatology and treatment (*hetu-lingaushadha-skandha-traya-mātra-nibandhanah*, *ibid*, 19). His philosophical inquiry stops with the concept of the five 'great elements' (*mahā-bhūtas*), and does not bother about any other supposition of the *Sāṃkhya* or *Nyāya* system. The main frame of reference is treatment of diseases and *AS* does not seek to justify the medical science with philosophical assumptions as *CS* and *SS* do.

This work became popular in South India, especially in Kerala and Karnataka. It was edited by *GANESHA TARTE* in Bombay in 1888.

There is a commentary on this work by *INDU* (said to be a student of *VAGBHATA*)

known *Śaśilekhā* (ed T RUDRA-PARASAVA, MANGALODAYAM, Trichur, Kerala, 1926) It appears that JAIJJATA (another student of VAGBHATA) and several others had written commentaries on this work, but they are no longer extant [See VAGBHATA and ASHTANGA-HRDAYA]

Aśva-Chikitsā A work on the treatment of the diseases of the horses, ascribed to NAKULA, also known as *Śālīhotram* (ed UMESH CHANDRA GUPTA, Bibl Ind 1887)

The work consists of 18 chapters dealing with species, anatomical parts of the body, speed, riding, management, diseases and treatment of horses. The last chapter deals with stables, the penultimate chapter is missing in the available Mss. Among the treatments, nasal inhalation (*nasya*), bolus (*pinda*), medicated butter (*ghṛta* or *ājya*), and decoctions (*kashāya*) are prescribed. There is a section on the poisons and their treatment [See NAKULA]

Aśva-Vaidyaka A work on the treatment of the diseases of horses by JAYADATTA-SURI (ed with commentary by UMESH CHANDRA GUPTA, Bibl Ind 1887). It borrows freely from earlier works on the subject by NAKULA and BHOJA.

The Aśvins Twin sons of Vivasvat and Saranyū (*RV*, 10,17,2), the Aśvins were celebrated as 'divine physicians' (*divyā bhishajā*, *RV*, 8,18,8, *YV*, *Vājasaneyī-samhitā* 27,9, *Kāthaka-samhitā* 27,4, *Maitrī-samhitā* 4,6,2, *Mahābhārata*, 1,7,15, *CS*, *Ch sth* 1,4,40-47, *SS*, *Su sth*, 1,14). Their skill in therapeutics and surgery is the theme of more than 50 hymns in *RV* (mostly in Books I and VIII). They were also known as 'Dasras' ('charming' *darśanīya*, or 'removers of disease,' *dasyatī kshipatī rogān*) and *Nāsatyas* (honest ones, *nāstī asatyam yayoh*)

In the traditional account of Ayurvedic teachers, they are placed between DAKSHA-PRAJAPATI, their guru and INDRA their

pupil (*BP*, *Pūrva-khanda*, I)

In the Vedic pantheon, they are classed among the 'divinities of the upper regions' counted after INDRA, AGNI and SOMA. Always together, the charming brothers are hailed as the youngest of gods, although the most ancient. Lustrous like gold, they wear garlands of lotus flowers and habitually ride fine steeds (hence 'aśvins', according to AURNANABHA). They also mount an excellent chariot, made in gold by the heavenly Ribhus, and drawn sometimes by asses and sometimes by wind, bull or porpoise, the chariot speeds on its three wheels, faster than mind (1,117,2). They also rode at times a 'rickety wooden cart and were laughed at by the wicked Vrtra' (cf. Skanda-svāmin's legend, 1,119,5).

Their office is to heal the gods, providing them with youth, light and delight, and, on occasions, with new limbs and organs. But they also hurry to the humans who are sick, weak, blind or broken, eager to help them and heal their wounds (8,22,10, 2,39,2). Many are their mercies which are recounted in *RV* (also in *CS*, *Ch sth* 1,4,40-47). They are described as compassionate and quick to come to succour.

They restored youth to the sage CHYAVANA who had become old, worn out and ugly (1,116,10, 1,117,13, 1,118,6, 5,74,5, 7,71,5, etc.). They cured the blind (RJRASVA, 1,112,8, KAKSHIVAT, 1,116,120, KANVA, 1,117,8, 1,118,7, 8,8,20), the lame (PARAVRJA, 1,112,8, SRONA, 1,112,8). They relieved ATRI from 'a gloomy abyss' (melancholia, 1,112,7 and 10) and made him youthful (10,147,1). They cured GHOSHA the daughter of KAKSHIVAT, of leprosy (1,117,7 and 19, 10,39,3 and 6), and brought the fainted VANDANA back to consciousness "even as a clever wheelwright repairs an old cart" (1,119,6 and 7). They quenched the scorching heat of ATRI with snow, and delivered VAMADEVA from his mother's womb (1,119,7).

Their surgical skill is also extolled. They

fitted VISPALA, whose legs were cut in a race or a battle 'like wings', with iron-legs (āyasīm jaṅghām), removed the cataract of KANVA (1,118,7), and corrected an auditory disorder of NṚSHADA-PUTRA (1,117,8) They also resuscitated several people who were victims of accident (like REBHA who had fallen into a well, 1,116,24, 10,39,9 etc) There are prayers to them from people frightened by robbers (1,120,7) Their compassion and service were not confined to gods and human beings, they even released a sparrow from the mouth of a wolf (1,116,14)

Their skill in dispensing medicines of 'the heaven, the earth and the air' (1,34,6), in preventing old age (2,9,4), in nourishing the body (7,9,11), and in securing health (7,8,19) is praised in several hymns They are described as especially efficient (karma, skilled in treatment) in removing the debilitating old age (jaranyayā nirrtam, 1,119,7) They are associated with an ancient version of the three-dhātu theory (tri-dhātu sarma 1,34,6)

There is an attempt to explain their symbolic nature YASKA mentions that the Aśvins were looked upon as symbolising 'earth-sky' (dyāvā-prithivī), 'day - night' (aho-rātram), 'sun-moon' (sūryā-chandramasau), 'water-light' (jala-prakāśa), but suggests that the historians (aitihāsikas) regard them as meritorious monarchs (*Nirukta*, 12,1,1) It seems probable that they were actual human physicians, who became deified because of their extraordinary skill and unfailing kindness

The followers of the Aśvins were probably the fore-runners of surgeons of the Dhānvan-tara School, while the bhishag-āṅgirasas (also figuring prominently in the Vedic corpus) were more physicians than surgeons Drugs are rarely mentioned in *RV* as administered by the Aśvins, but their 'operations' (1,117,13 chakrathuh śachibhiḥ, the commentator SAYANA explains, bhaishajya-lakshanaiḥ karmabhiḥ) are highlighted

The *Bowers Mss* ascribes the Haritakī-kalpa (a preparation from haritakī, *Terminalia Chebula*) to them (Chap II cf *HIM*, Vol I, pp 161-164) In later manuals, there are about 40 formulae in their name (like medicated ghee from Allium sepa, laśunaka-ghṛta, anti-febrile ghee, jvara-hara-ghṛta, anti-toxic ghee, visha-hara-ghṛta, a citrus pill, mātulunga-gudika, turmeric powder, haridrā-chūrṇa, a tonic with piper longum, pippalī-rasāyana, and so on)

Atharva-Veda Like *Ṛg Veda* (and unlike *Yajur Veda* and *Sāma Veda*), the *Atharva Veda* represents an independent *Samhitā* But the collection of hymns is both heterogeneous and haphazard It had originally nine recensions, two of which have survived, *Śaunaka* and *Paippalāda* The former, which is more commonly current, has 730 hymns (sūktas) in 20 sections (kāṇḍas), with a total of 5987 verses and prose passages Some of the verses (about 16 per cent) are borrowed from *RV*

The chief concern of this corpus is the daily life of the people, although philosophical speculations are not absent Naturally, therefore, health and sickness figure prominently Besides the hymns that seek to secure long life and health (āyushyāni) and happiness and general welfare (paushtikāni), there are hymns that deal with political matters (rāja-karmāni), domestic and social harmony (saumanasyāni), spells concerning women (strī-karmāni) However, the major theme seems to be black magic and sorcery (ābhichārikāni), exorcism and counter-exorcism (krtya-parihārāni)

Medicine is involved within this framework But distinctly medical matters (diseases, drugs, treatments, preparations) are so numerous and important that the corpus was designated as Bhaishajya-Veda (Medical Veda) (- Atharva vedo vedah so'yam iti bhesajam nigadet, *Śāṅkhāyana-śrauta-sūtra*, 16,2,1, Rchah sāmāni bhesajā

yajūmshī hotra brūma, AV, 11,6,14, bhesha-jam vā ātharvanāni, *Pañcha-vimśa-brāhmāna*, 12,9,10, also 16,10,10), although the expression 'bhaishajya' occurs only in *Kauśika-sūtra-brāhmāna*, and not in AV

Atharvan, the seer of all the medical hymns here, is reputed to have been a magician as well as healer (e g I,2,3,10,11,23,30, 35, II,4,13,29, IV,4, V,28, VI,17,59,85,90, 92,109-113) The other sage, ANGIRAS, who is associated with this Veda, was also a healer, and CHARAKA mentions him among "the makers of Indian medicine" (āyurvedasya kartārah)

It is in this context that Ayurveda is affiliated to AV either as a derived discipline (CS, 1,30,20-21, ātmano'tharva-vede bhaktir ādeśyā) or as an auxiliary branch of learning (upānga, SS,1,1,5), or as a minor Vedic corpus (*upa-veda*, Nīlakantha on *Mahā-bhārata*, 2,11,33, *Vishnu-dharmottara*, 2,22,130, *AHr* 1,8,8)

Several diseases are named and described (e g , fever, takman, I,25, V,4,22, VII,116, XX,39 dropsy, jalodara, I,10, VI,22,24,96, VII,83, leprosy, kilāsa, I,23,24, cough, kāsa, VI, 105,107, phlegm, śleshman, I,12,13, VI,105,107, Chlorosis, harimā, I,22, VI,24, tuberculosis, jāyānya, VII,76,2, scrofula, apachit, VI,5,57, VII,74,76, head-ache, śirshakti, I,17, IV,12, polyuria, āsrāva, I,2, II,3, VI,44, heart-disease, hrdāmaya, I,22, glandular sores, nādī-vrana, VI,57,109, insanity, unmāda, VI,111,1-4)

Anatomical knowledge as can be gleaned from AV (in several scattered passages, but mainly in II, 33 and X, 9,1-8) is by no means fanciful or cursory Structural parts as well as functions have been more or less accurately identified

We also find the beginnings of medical practice in AV (e g , washing the sores, V,57,1-3, pricking of the boils and applying salt to them, VII, 78,1-2, probing the urethra, I, 3,8-9, stopping bleeding I, 17,4, use of honey for weak heart and bad eyes,

VI, 24,1-2, therapeutic uses of water, I,6,2, III, 7,5, III, 12,9, VIII, 6,3, XI, 6-23, etc , mountain breeze as a cure, IV,13,3, sunlight as a cure for diseases like chlorosis, III,7,7) Effects of parasites in the body (krīmī, in the small intestines, ānvantram, in the head, śirshanyam, in the ribs, pārshṭeya, and in the muscles, avaskaram) were known (II, 31,3-5, II, 32,1-4, V, 23,1-5, VIII, 6,15 etc), as also the methods of eliminating them (refraining, disentangling, removing, fumigating, cf "Parasitology in AV," *Indian Culture*, II, 99-113) Difficult labour was handled (I,11,5)

Numerous herbs have been mentioned along with their therapeutic properties (jāṅgīdā, XIX,34, pippalī VI,109,1-6, apāmārga, IV,17,6-8, lākshā, V,1,5, kushṭha V,4, prṣṇaparnī, II,25,3, rohinī, 4,12, etc) A distinction appears to have been made between herbal medicine (oshadhī) and magical healing (bhaishajya) However, a physician (bhīṣhak) was supposed to be well versed in both

Four kinds of treatment were recognised 'magical healing' (ātharvanī, securing health by favourable rites), 'witchcraft, black magic' (āngirasī, employment of spells to ward off evil) 'elemental' (daivī, nature cure and herbal cure, use of water, air, plants, etc), and 'human' (mānushī, rituals, prayer, pacification, etc) Diseases were regarded as effects of evil spirits (kanvas, atrins, rakshas, piśācha, also amīva, apsaras, palala, etc), and disease itself was looked upon as a demon Charms were, therefore, used against diseases, in fact, a charm was claimed to be more powerful than a hundred physicians and a thousand drugs (II, 9,3) But a charm was often used along with a drug

Charms are used against poisons also (agada) Apart from poisonous snakes and scorpions (e g , V,13,16, VI,12, VII,56), poisonous plants (V,6,8), poisonous termites, and poisonous elements in the sun and earth are also recognised (V,13,1)

There are about 6000 antidotes to poisons mentioned Mineral poison (IV,6) and vegetable poison (IV,7) are distinguished

Diseases are said to be produced from the three possible sources poisons within the body (visha, e g , IX,8,10), parasites (yātudhāna) that enter into the body by way of water, air and food (V,29,6-7), and disturbance of the physiological factors, vāta (VI,109,3), pitta (XVIII,3,5) and kapha (VI,127,2) Animal behaviour was carefully observed to get clues for medicinal plants and herbs (VIII,7,23-26) Medicinal value of metals (e g , manī, I,29 and VIII,5, jāṅgīdā II,2) and shells like coral (śaṅkha, IV,10) were discovered

The *Kauśika-sūtra*, which is in the nature of a supplementary text to AV, distinguishes (according to the commentator Keśava) two kinds of diseases . those which are caused by food (āhāra-nimitta) and those which are produced from evil influences from a previous existence (pūrva-janma-pāpa-nimitta 4,25) The former are treated by drugs, while the latter are corrected by magical rites (śānti-karma), which constitute the subject-matter of AV

Nevertheless, the *Kauśika-sūtra* contains additional information about various diseases mentioned in AV, and also suggests numerous new drugs and treatment procedures e g , use of honey in diseases of śleshman, drinking of oil in diseases of bile and wind, inhaling ghee in tetanus and tremor, application of cowdung mixed with turmeric and some other drugs in white leprosy, sprinkling of boiled lac-water over bleeding wounds, application of leeches for blood-letting, use of salt to break open boils, and of the kushtha plant in consumption and leprosy, and drinking of ghee mixed with turmeric powder in snake-bite (4, bhaishajyāni)

The use of compounds (e g , ala-viśola-phāntā, 4,25,19), products of the cow, oils, metals, salts, conch-shell, animal products

and other articles of food are recommended, besides herbal medicine

Ātreya (-Punarvasu) The Indian therapeutics has been designated as 'Ātreya's tradition' (Ātreya-saṁpradāya), and it was at one time usual for all physicians to be called ātreyas', as surgeons were called 'dhanvantaris'

Ātreya means "the scion of the Atri family" or descendent of the sage Atri (son of Vasiṣṭha, and one of the seven celebrated sages in Indian mythology) Atri is a Vedic sage, the fifth book of RV has most of its hymns contributed by Atri and the Ātreyas He was a favourite of the 'divine' physicians Indra and the Aśvins, he is regarded as the first human being to have learnt the art and science of medicine from the gods RV (I, 139,9) would even make him the link between human beings and gods HEMACHANDRA, however, says that the name Atri actually symbolises the bodily constituent 'chyle' (sarīrastha-rasa-dhātu)

The Ātreya of the medical tradition is said to be a student of another sage Bhāradvāja, who learnt medicine from Indra, who in turn had got it from the Aśvins (CS, *Sū Sth* 1, 19-31) The account in *Bhāva-prakāśa* relates that both Bhāradvāja and Ātreya learnt medicine directly from Indra on different occasions There is also a mention that Bhāradvāja was a student of Ātreya CHAKRAPANI-DATTA points out that some people wrongly identify Ātreya with Bhāradvāja, and quotes an ancient authority, HARITA to the effect that Bhāradvāja was the teacher of Ātreya (CS, *Sū Sth* 1, 30)

The confusion is natural because Ātreya and Bhāradvāja were in fact family names and the two families were closely connected with each other (cf . PANINI Gana-pāṭha 15 61 and 62, *Mahābhārata Bhīṣma-parvan*, 376, *Brhadāranyaka-Upanishad*, 2 6 1-3) RV refers to a Vasu-Bhāradvāja (9 80 82) Vasu being the usual epithet of the Atri

Many Ātreyas are mentioned in the medical tradition. Charaka himself refers to three Ātreyas: PUNARVASU-ĀTREYA, KRSHNA-ĀTREYA and BHIKSHU-ĀTREYA. It is uncertain if they were different persons or not. PUNARVASU-ĀTREYA is so called because he was born in the Punarvasu (gemini) constellation (PANINI 4,3,34). KRSHNA-ĀTREYA is so called because he belonged to the Krshna-Yajurveda school. There was an Ātreya who headed the medical school in Takshāśilā, and under whom the famous JIVAKA (physician to the Buddha) studied. There is a medical treatise, *Ātreya-Samhitā*, which must be the work of still another Ātreya.

In the accepted medical tradition of Kāyachikitsā, the sequence of medical authorities in India is given thus: BRAHMA-PRAJAPATI, AŚVINS, INDRA, BHARADVAJA, ĀTREYA (PUNARVASU) and his six disciples (AGNIVEŚA, JATŪKARNA, BHELA, HARITA, KHSARAPANI and PARASARA). Each of these disciples wrote a medical treatise incorporating the teachings of Ātreya. In course of time, AGNIVEŚA's treatise alone survived, being most comprehensive and pre-eminent. Charaka follows this line, and his *Samhitā* is intended to be a redaction of Agniveśa's original work, it is thus that Charaka always mentions the name of Ātreya with the respectful adjective 'bhagavān'.

Every chapter in CS opens with the remark: "What follows is what the revered Ātreya said" (*iti ha smāha bhagavān Ātreyah*). In fact, the main structure of this work takes the form of discussion-sessions with Ātreya as the principal spokesman and Agniveśa as the chief interlocutor, there are other medical experts who participate in the discussions.

Ātreya is credited with the prognostic classification of diseases into favourable or curable (sādhya), unfavourable or incurable (asādhya), and unfavourable or incurable but manageable (yāpya). In the background of this classification is an interesting dialogue

between Ātreya and Maitreya recorded in CS, (*Sū Sth* 1,10)

Maitreya "Medical treatment does little good, for we see sometimes that a patient does not get cured and dies, although well attended to by expert physicians, commanding all facilities of nursing and medicine, and himself cooperating in the treatment. On the other hand, a patient that has none of these advantages does nevertheless recover and get alright. | Therefore medical treatment does not seem to matter at all."

Ātreya "No, it is not proper to say so. It cannot be said that medical treatment is useless in diseases which are amenable to treatment. A patient may indeed be capable of recovering his health without the aid of medicines. Even then, medical treatment is not uncalled for. It is like a man who has fallen down. He may be capable of getting up on his own. But should another man help him, he may get up sooner, more easily and without much distress. Even so, the patient is helped by treatment. But it is true that not all diseases are amenable to medical treatment. A physician would of course waste his efforts in trying to cure an incurable disease. Just as an archer examines and decides about the success of his shooting, even so a clever physician must proceed with regard to a disease."

Ātreya-Samhitā This work, ascribed to Ātreya, is regarded as the oldest medical treatise in India. The printed edition of the work (called *Hārīta Samhitā*, ed. by K C SenGupta, Calcutta, Śaka 1807) mentions that Hārīta is the author, while Ātreya was the master who provided him with the material. Therefore, the work is sometimes called *Hārīta-samhitā*. Hārīta was one of the six disciples of Ātreya-Punarvasu, and CS suggests that he, like the other five, composed a

medical treatise of his own, incorporating the teachings of Ātreya. But the extant *Samhitā* ascribed to Hārīta is clearly a recent work, as it mentions not only Charaka and Suśruta but Vāgbhata also. It says that Atri is pre-eminent in the *krta* age, Suśruta in the *dvāpara* age, and Vāgbhata in the *kali* age (p 349). This work, further claims that Ātreya prepared five different medical treatises of varying bulk, but Charaka does not seem to be aware of this.

Here is the analysis of *Ātreya-Samhitā* prepared by Goldstucker (Mrs Manning *Ancient and Medieval India*, pp 339-42).

Chapters 1 to 3 may be considered as a general introduction. Chapter 1 relates the meeting of Ātreya with some of his pupils on the northern face of the Himālaya. Hārīta, one of these pupils, asks the questions on the origin and treatment of disease. Ātreya explains that the Ayurveda, meaning medical science, cannot be fully communicated within the limits of human life, and that his pupils must therefore content themselves with a brief account of the smallest of his own compositions, which is contained within 1,500 śloka (or verses).

Chapter 2 shows the general division of his work into six books and gives their names. In conclusion, it states the eight constituent parts of the Ayurveda.

Chapter 3 classifies diseases, as 1 curable, 2 incurable, 3 curable by charms, 4 scarcely possible to cure. This chapter also distinguishes the patients to whom physicians must attend, and on what terms, and signifies to what persons they must refuse assistance.

Chapter 4 treats of the physical influence of soil and season on age and temper, and on the influence of the winds.

Chapter 5 enumerates the six tastes as sweet, astringent, bitter, sour, salty and pungent, and the influence of each on the human body.

Chapter 6 deals with the medical qualities

of different kinds of water—water of the Ganges which comes from heaven, water from the sea, water from clouds in general, and water from thunder, clouds, snow or ice. It concludes with prescriptions for the use of hot water and cold water in specified diseases.

Chapter 7 discusses the physical and medical properties of milk—distinguishing the milk of kine, goats, ewes, buffaloes, camels and women. It states the cases in which the drinking of milk of either kind is beneficent, and concludes by discoursing on the medical properties of butter-milk. Chapter 8 continues the subject.

Chapter 9 deals with the medical qualities of sugar-cane and of preparations from it.

Chapter 10 is on sour gruel.

Chapter 11 and 12 mention infusions prepared from rice, barley and other grains.

Chapter 13 deals with oils prepared from *til* (sesamum), flax, the castor-oil plant and others.

Chapters 14, 15 and 16 also dwell on the medical properties of rice and various kinds of grain.

Chapter 17 discusses four kinds of herbs, according to their leaves, flowers, fruits and bulbous-roots.

Chapter 18 is on sweet fruits such as mangoes, rose-apples, pomagranates, myrobalans, citrons, grapes and the fruits of *carisosa*-corrianders and of the *mimusops eleugi*.

Chapter 19 deals with four kinds of spirituous liquor, as made from molasses, honey, meal and nogweed.

Chapter 20 describes animals as hoofed or horned, beasts of prey, birds, fishes, snakes living in the water or in arid tracts. Many species are given under each division and the medical properties of their flesh are described.

Chapter 21 gives dietetical rules and prescriptions and discusses the properties of food prepared from various combinations of

the materials previously described

The second main division of Ātreya's work called Arishtaka consists of eight chapters

Chapter 1 treats on the moral causes of diseases. All diseases are said to spring from men's actions. All resemble hell, the curable as well as the incurable. And to some crimes fantastic punishments are assigned, a man who kills a Brahmin will be afflicted with jaundice, and one who kills a king, with consumption

Chapter 2 is on dreams

The subject of the six remaining chapters appears to be lucky and unlucky symptoms and forebodings

The third division of this work is called Chikitsā which means medical treatment. This portion treats of diseases in detail. It appears to display much accurate observation, which can only be glanced at in these pages. Intermittent fevers are distinguished as of four kinds returning at an interval of one day, three days, four days or at some long intervals

Much is said of diarrhoea, dysentery and allied diseases. Indigestion is described as flatulency, caused apparently by overeating, and accompanied by sleeplessness, pain in the limbs, burning in the throat, etc

The 8th Chapter is devoted to the sound and unsound condition of the digestive fire (Agni) of the stomach

The 10th treats of sharp pain, especially in the stomach, provided by excessive fatigue, night-walking, sorrow, cold food etc

The remaining chapters continue the subject of diseases, touching also on consumption and various kinds of haemorrhage

The last division treats of antidotes

Ayurveda Indian medicine has been called Ayurveda, an expression that is not found in the Vedas, Upanishads or in the early portions of the two great epics, *Rāmāyana* and *Mahābhārata*, nor in the Buddhist works in Pāli. Charaka and Suśruta

use this term to signify the entire corpus of the medical wisdom. The first component āyuh in the word signifies "life" (jīvitam) and the other component veda refers to "a branch of learning" (vidyā-sthāna)

Ayurveda would thus mean "the science or art of living." Charaka explains it as the science which instructs us about good living (āyur vedayatī iti), while Suśruta finds in Ayurveda not only an inquiry into the conditions of good living (āyur asmin vidyate) but also an art by means of which good life is secured and safeguarded (anena vā āyur vindati). BP summarises the two views and describes Ayurveda as both a theoretical structure and a practical discipline

It is interesting that the expression Veda has been integrated with this art and science. The word Veda has several etymological associations. It means "knowing" (vid jñāne), "examining" (vid vichārane) and "obtaining" (vidlr lābhe). The import of the expression is that the knowledge is directed towards a specific benefit. It may be noted that the ancient and eminent authority on Vedic interpretation, Śabara-svāmī, insists that a mere study of the Vedic texts will not produce the expected results, and he gives this as the opinion of the 'venerable ritualists' (tatrabhavanto yājñikāḥ). Veda, that is to say, is not a mere theoretical framework—it fulfils itself only when the procedures that it lays down are followed. The Vedic character of Ayurveda would thus imply the science of life as well as the art of living

There is some discussion in the early works about the status accorded to Ayurveda. Ayurveda has been variously regarded as an independent Veda, as a minor Veda (upaveda) and as a supplementary text of the Veda (upāṅga). Vedas were originally regarded as three in number, and were later counted as four. Rg, Yajus, Sāman and Atharva. *Brahmavaivarta-purāṇa* claims that the Creator, when he saw the four Vedas and considered the essence thereof, produced

Āyurveda as the fifth Veda (1,16,9,10) *Gūdhā-bodha* quotes Kanāda and speaks of the five Vedas with Āyurveda as the fourth and Atharva as the fifth

This is an extreme position. Most of the authorities are content to regard it as a secondary or minor Veda (upaveda) or as a supplementary branch of knowledge (upāṅga) *Mahābhārata* (2,11,33), or at least its commentator NILAKANTHA, counts Āyurveda among the four upavedas (medicine or *Āyurveda*, archery or *dhanurveda*, music and dance or *gandharva-veda* and political economy or *arthaśāstra*) KATYAYANA (author of *Charana-vyūha*) and the 'Elder' Vāgbhata (author of *AS*) likewise regard Āyurveda as an upaveda of *Rg Veda* and *Atharva Veda* respectively

Suśruta, on the other hand, is more modest in his claim. For him, Āyurveda is only an upāṅga or supplementary text affiliated to *Atharva Veda*

The discussion becomes relevant because Āyurveda as an independent Veda would lay claim to original and infallible revelation, while as an upaveda this revelatory character is to an extent limited, and as an upāṅga it becomes only a matter of secondary or dependent revelation (to use an expression of Paul Tillich)

We may refer here to an inquiry into the validity of the Veda status of Āyurveda. JAYANTA-BHATTA, the renowned thinker of the Middle Ages, in his *Nyāya-mañjarī* discusses this problem. He points out that the validity of a Vedic text is founded on its being the words of a competent, compassionate and trustworthy authority (āpta), known for his wisdom, integrity and selflessness. Such a one would intuitively apprehend and truthfully communicate the truths to others, not competent to apprehend them directly, he is also motivated by a desire to do good. Jayanta-bhatta concedes that the truths revealed in Āyurveda do not stand solely on the testimony of the trustworthy authorities,

they can also be verified by the experience of others. But, he explains, it is impossible for a single individual or for a group of individuals to test and verify the truths intuitively grasped by the sages, and the issue becomes more complicated when you consider the large number of prescriptions and the larger number of their combinations that have become current. The customary methods of analysis and testing become utterly useless. The original authors of Āyurveda were sages, and therefore endowed with the extraordinary powers of intuition and vision. Their knowledge of human ailments and remedies was perfect, it needs no verification or improvement. Jayanta-bhatta concludes that we have to rely on their words as we rely on the authority of the Vedic texts, without wanting to subject them to our usual methods of verification and examination.

Āyurveda—Mahodadhī A pharmacological work prepared by the physician SUSHENA, hence the alternate title of the work, *Sushenavaidyaka*. The opening verse, however, gives the title of the work as, '*Anna-pāna-vidhī*'. This is amply justified, for description of articles, of food, drinks, bath, anointment, chewing-betel-leaves, fumigation, etc., forms the major theme. The work was probably compiled for the benefit of princes and noblemen.

Dhattūra (Datura fastuosa) is mentioned in connection with an aphrodisiac preparation. There is no reference to opium.

Nothing has been known about the author. A Mss of this work is dated A D 1682. The work has been cited in *Kaṛiyadeva-nighantu* and *Madana-pāla-nighantu*.

There is a commentary on this work entitled *Ārogya-chintāmaṇi* by Dāmodara, son of Viśhnu-bhatta and resident of Viḍarbha.

Āyurveda-Rasāyana • This is an incomplete commentary on *AHR* by Hemādri (ed by Hari-Śāstrī Parādkar, Nirmaya-Sagar,

1939) It covers Sūtra-Sthāna and Kalpa-Sthāna in full, and only the first five chapters of Nidāna-Sthāna and the first six of Chikitsā-Sthāna

The commentary explains that this work was indicated by the fact that the religious duties and responsibilities, which are explained in his *Chaturvarga-chintāmanī*, depend upon sound health (tadukta-vrata-dānādi-siddhyangā-rogya-siddhaye, prefatory v 2)

The author claims that his work would be in conformity with the views of CS and SS (Charaka-Suśrutādi-matānugā), and that he sheds light even on the details that Harichandra's commentary on CS and Jaijjata's on SS have not explained (prefatory verse 4)

Among the medical authorities cited in this work are Bhattāra-Harichandra, Jaijjata, Indu, Vrnda, Dalhana, Vaṅga-sena and Śārngadhara. It refers to the earlier commentary on *AHr* by Aruna-Datta and Chandranandana. And it makes extensive use of the matter included in *AS* and excluded from *AHr* [See HEMADRI]

B

Badiśa Badiśa is an ancient medical authority mentioned by Charaka, as participating in a discussion on the nature of wind (vāta), both in the body and outside, its derangement and treatment (CS, *Sū sth*, ch 12 vāt-akālākalyam, 7)

Badiśa, who had another name Dhāmār-gava, speaks after Kankāyana, the physician agreeing with him and Sankrtyāyana that six are the qualities of the wind (vāta) astrin-

gent (rūksha), pleasant or light (laghu), cool (śīta), violent or hard (dārūna), pungent (khara), and plain or pellucid (viśada). These are the qualities that derange the wind, and they are also the qualities that restore the normalcy (vāta-prakopa-praśamanāni bhavanti), when the principle of opposition is utilized: astringent (rūksha) deranges, but unctuous (snigdha) restores, light (laghu), cool (śīta), violent (dārūna), pungent (khara), pellucid (viśada) are the qualities that derange while heavy (guru), hot (ushna), mild (ślakshna), soft (mrdu) and bilious (pittala) qualities restore. Derangement is caused by perforating or opening up the cavities (sushira), and restoration is achieved by solidity or closure of the cavities (ghana).

Chkp explains that although the wind (vāta) is not directly connected with either the deranging factors or the restoring factors, it gets associated with them as their effects are felt on the body (śarīra-sambaddhais taiḥ CS, 1,12,7). VARYOVIDA, who speaks after Badiśa in the discussion, agrees with him, and elaborates on the theoretical involvement of the principle of wind [See VARYOVIDA]

He held the view that tastes are eight in number (ashtau rasāḥ): sweet (madhura), sour (āmla), saltish (lavana), acrid (katu), bitter (tikta), astringent (kashāya), caustic (kshāra) and the taste that is non-manifest (avyakta). *Chkp* quotes a verse to the effect that even the goddess of wisdom (Sarasvatī) would not be able to differentiate between the sweet tastes of sugar-cane, milk and molasses, although the tastes are actually vastly different (mādhuryasyā-ntaram mahat). Perhaps this is in explanation of the eighth taste suggested by Badiśa.

Charaka refers to Badiśa again while discussing the problem of foetal development (CS, *Sā sth*, ch 6,21). Badiśa is said to have held that the extremities, upper and lower organs of prehension and locomotion (hasta-

pāḍau itī) develop first in the foetus within the mother's womb

Basava-rāja : He is the author of *Basava-Rājīyam*, a compendious work in Sanskrit, popular in South India, especially Andhra Pradesh and Karnataka

Some details about the author are available in the work itself. He hailed from Kottūru, in the Telugu country, was a descendant of some Nīlakantha, and son of Namah-śivāya who was a pupil of Rāma-deśika-ārādhyā of the Nidimāmidī pontificate (a Vīraśaiva religious institution with a large following in Andhra Pradesh and Karnataka). He describes himself as a celebrated physician (vaidyā-jana-śīrobhūshana).

But little can be known about his precise identity, or the time in which he lived. He is sometimes identified, however wrongly, with the famous social and religious reformer Basaveśvara, or with the author of *Śivatatva-ratnākara* (A D 1709-10). He was perhaps only a physician, and probably this was his only work. (See BASAVA-RĀJĪYAM)

Basavarājīyam • Known as *Vrsha-rājīyam* in Sanskrit, this work is also called *Basavakam* by the author (1,14), after his own name. This is an encyclopaedic medical work in elegant verse, composed by Kottūru Basava-rāja, along with annotational verses in Telugu. The work in 25 chapters has 6,400 verses, dealing with all kinds of diseases, their causes, their favourable or unfavourable prognosis, and their treatment (1,13).

The author mentions several important medical works (*grantha-ratnāni*) on which this compendium is based (1,5 to 12). Besides the wellknown works of Charaka, Mādhava (frequently quoted) and Vāgbhata, and *Chikitsā-sāra-samgraha*, we come across the names of many medical works which are now lost, or whose identity is hard

to ascertain. *Bhairava-kalpa*, *Siddha-rasārṇava*, *Bheshaja-kalpa*, *Devī-śāstra*, *Śārira-sūtra*, *Aśvinīya-āyurveda*, *Sindūra-darpana*, *Chandra-kalpa*, *Nandi-nāthīya* and *Agni-matāntaram*. Besides, *Jyotiṣa* and *Karṇāvipāka* appear to be astrological manuals, and *Kāśī-khanda* and *Brahma-Gāruda* are purāṇic texts.

There are citations from works which the compiler does not name. He merely says "in one book" (*anya-śāstre*) or in "another work" (*granthāntare*), or "according to another view" (*matāntare*). *Pūjyapādīyam* is mentioned, and is often quoted, probably it was the medical work of the great Jaina writer PUJYAPADA (C A D 500), a formula by him (known as *Kālāgni-rudra-rasa*) is also mentioned.

The motivation for preparation of this work was to contribute to the good of the folk (*lokapakāraṁ*) by compiling most acceptable recipes and ideas of all the physicians (*jagad-vaidyā-nutam*). The author claims that this work is the most distinguished medical treatise in the Kali age (the fourth phase of time), even as Charaka's was in the Kṛta age (the first phase), *Rasārṇava* in the Tretā age (the second) and *Siddha vidyā* in the Dvāpara 'age' (the third). Charaka's work is well known, but the other two are hard to identify. It is likely that the reference is to the two alchemic works, one of which (*Rasārṇava*) is ascribed to Nāgārjuna.

The work belongs to the Agastya-sampradāya or the so-called Rudra-sampradāya of medicine, which made an extensive use of chemical and alchemical preparations (in contradistinction to the Brahma-sampradāya, crystallized by Agniveśa and Charaka). The author frequently refers to some *Bhairava-kalpa*, which probably was associated with Manthāna-Bhairava of the Siddha cult. There is a wealth of information given in this work concerning medicinal treatment of several metals and minerals (*loha-rasa-*

sindūra-bhasma), popular among the Siddha physicians Mercury is given great importance, the medicinal value of precious stones and poisons is also considered

Pulse-examination (nāḍī-parīkshā) figures prominently (1,38 to 73), and the other diagnostic aids mentioned are touch (sparśa), appearance (rūpa) and voice (śabda)

The first chapter (638 verses) is the longest, and elaborately considers all aspects of general medicine, although the theme of this chapter is 'fever' of several kinds. It deals with diagnostics, clinical examination, the dosha-theory, medicinal diet, fasting, and principles of treatment. The next chapter (307 verses) continues the consideration of symptomatology and prescribes remedies (mostly chemical). It classifies sannipāta into 13 kinds and enumerates the favourable and unfavourable prognostic details

Chapter 3 (61 verses), deals with the examination of urine, the disturbances of the *doshas*, the influence of seasonal variations on health, and appropriate medicines for the ailments

From chapter 4 onwards specific diseases such as tuberculosis, anaemia, jaundice, dropsy, nervous diseases, fainting, skin-diseases, diseases of the eye, nose and head, epilepsy, insanity, urinary disorders, elephantiasis, fistula, vomiting, goitre, hic-cough, diabetes, dysentery, sprue and abscess are dealt with

Chapter 23 (40 verses), which is the shortest, deals with poisons from bites of snakes, scorpions, dogs and rodents, their effects and treatment. There is an incantation in mixed Marāṭhī that is prescribed as an antidote to all snake-bites

Chapter 24 (199 verses) deals with astrological, and occult aspects of various diseases (karma-vipāka) and prescribes remedies like incantation of magical formulae, feeding of poor and pious people, rituals of various kinds, worship of divinities (like Ganeśa,

Garuda, Śiva, the Sun, and the tutelary-goddess), circumambulating sacred trees, wearing of precious stones, and recitation of the thousand names of Vishnu

The last chapter (606 verses) which is also elaborate, deals extensively with alchemic matters treatment of metals and preparation of chemical drugs. This chapter is a clear indication that the author belongs to the Rasa-siddha tradition or what is known as the Rudra-sampradāya

The work was very popular in Andhra Pradesh and Karnataka, especially in the former region. It was such a meticulous compilation of numerous authoritative prescriptions that the physicians acquainted with this work considered it unnecessary to study CS, SS, or MN

It has been printed many times, often with Telugu translation. The best edition is the one by PUVVAḌA SURYANARAYANA RAO (Vāvilla Rāmaswāmī Sāstrulu, Madras, reprinted 1951) [See BASAVARAJA]

Bhadra-Kāpya Bhadra-Kāpya is an ancient medical authority quoted by Charaka (CS, *Sū sith*, ch 26,8). He was the principal participant in the discussion that took place in the delightful garden, Chaitraratha, concerning tastes (rasa). He is named first among 'the great sages' (maharshayah) who were learned and old (śruta-vayo-vṛddhāḥ) that had gathered round the revered Atreya. Indeed the entire chapter is entitled 'Ātreya-Bhadra-kāpyīyam'

According to him, the taste is only one (eka eva rasah). It is apprehended by one of the five sense-organs, the tongue, and is nothing other than water (udakād anyanyah). He describes it as a psychological apprehension (bhāva), for, as *Chkp* explains, the absence of taste is also apprehended by the tongue (rasābhāvo'pi jihvayā grhyate)

The discussion about taste is a prelude to the determination of proper food (samyag-

rasāhāra-viniśchaye) SIVADASASENA explains that proper food can be prescribed only when the tastes are understood. He quotes a half-verse to the effect that there can be no digestion without potency, and there can be no potency without taste (pāko nāsti vinā vīryam, vīryam nāsti vinā rasāt), thus both potency and digestion depend upon taste.

Bhadra-Kāpya is again mentioned during the discussion concerning the causation of diseases (CS, *Sū sth*, ch 25, 18 and 19). He rejects the view of Kauśika that diseases are hereditary. He argues that one born blind will not have blind parents. An individual is not formed merely by the constituents (the five elements) that are handed down from the parents, the more powerful cause of birth is one's own past Karma (karmajas tu mato jantuh). Even so, the diseases are derived from this source alone (karmajās tasya chāmayāh). Devoid of Karma, there can neither be the individual nor his ailments. Here is an ancient argument against heredity as responsible for human personality or for proneness to illnesses.

Another reference to him is in the discussion regarding foetal development (CS, *Śā sth*, ch 6, 21). His view is that navel (nābhi) is the first organ to be formed in the foetus, for that is the part which is necessary to assimilate nourishment from the mother's body (ahārāgama iti krtvā). The foetal body can develop only by such nourishment. This argument is ascribed to Parāśara in SS.

Bhaishajya-Ratnāvalī • This work is a recent compendium of recipes, prepared by GOVINDA-DASA, and published by his descendant VINODA-LAL-SEN (Calcutta 1893). It includes numerous recipes, effective in the experience of the publisher. The book is popular in the northern regions of the country, especially in Bengal. It has been translated into Hindi.

Bhaishajya-Vastu • This is a Sanskrit medical text included in the early Buddhist *Vinaya* belonging to the Mūla-sarvāsti-vāda sect. Out of the original 650 leaves in the Tibetan verses, 300 leaves of the Sanskrit original have been recovered and edited (Gilgit MSS, Part I, ed. by Nalināksha Dutt, Śrīnagar, Kashmir).

Unfortunately much of the valuable medical material has been lost, the available leaves deal mostly with stories and anecdotes of the usual Buddhist avadāna type. However, even from this portion some interesting medical information can be gleaned.

The Buddha allows the monks who are ill to deviate from the monastic rules so that they may carry out the prescriptions of the physicians. Four kinds of medicines (bhaishajyāni) are prescribed: (1) to be taken at the proper time (kālika), e.g., scum of boiled rice, boiled rice gruel, sour gruel, meat-cake, (2) to be taken continuously for a very short duration (yāmika), e.g., coconut milk, gum of Śālmālī tree, vinegar, juices of the leaves of trees like aśvattha and udumbara, juice of raisins and dates, (3) to be taken for a week (sāptāhikam), e.g., clarified butter, medicated oil, molasses, honey and sugar, and (4) to be taken throughout life (yāvajjīvika), e.g., medicines produced from roots of plants and trees, from stalks or stems, from leaves, from flowers, from fruits, from the five resins of trees like hiṅgu and sarja, five saline substances (yava-kshāra, yāvaka-śūka, sarjaka, tila, vasaka), five salts (saindhava-, bīḍa-, sauvarchala-, romaka-, sāmudra-lavaṇa) and five astringents (āmra-, numba-, jambū-, sirīsha-, kośamba-kashāya).

There are instructions regarding preparation of drugs and their preservation so that the drug-potency (vīrya) is not lost. There is the mention of a storage-apartment (glāna-kalpika-śālā). In the extant text, some ailments like vāta, kacchu, eye-disease, and in-

sanity are dealt with. Five añjanas (eye-ointments) are mentioned pushpa-, rasa-, chūrna-, gutika-, and sauvīra-añjana. Insanity is sought to be cured by āma-māmsa (?) In this connection, the narrative is as follows (pp 1x-x)

“Saikata, the mendicant in Śrāvastī, became insane. His mind got unhinged. The householder that saw him thus complained ‘These mendicants who have left home at the behest of the Śākya Muni (Buddha) are indeed orphans. Had this unfortunate man been at home, his father would have taken care of him and would have got him treated’

“The talk reached the ears of the Buddha who at once arranged for a physician to visit Saikata. The physician prescribed ‘āma-māmsa’ (meat) for the patient. The patient refused to eat meat. When this was communicated to Buddha, he suggested that the patient’s eyes should be blind-folded, and that the prescribed meat given to him. They did likewise, but removed the bandage that covered the patient’s eyes too soon. The patient saw the remains of what he had eaten, and at once vomited all that he had eaten.

“When the Buddha came to know of this, he recommended that the bandage should not be removed until the traces of what the patient had eaten were removed from his sight. In case the bandage had to be removed quick, the patient’s attention should be focused on a vessel of clean water that should be placed before him, this would prevent nausea. The instructions were carried out and Saikata was cured.”

There is the anecdote of another monk Svāti who fainted, being bitten by a snake. The physician prescribed, among other drugs, urine of newly born calves, ash of five kinds of wood, and mud. When the cure was not effected, the Buddha taught Māyūri-vidyā to the disciples, who by repeating the magic formula in the presence of Svāti revived him. The preserved portion closes

with this charm, which had been discovered by the bodhisattva in his incarnation as a peacock.

It may be noticed that Māyūri-Vidyā figures prominently also in the *Bower MSS* (*Nāvanītakam* sections 6 and 7). It was a Buddhist charm of folk origin against snake bite, based on the belief that the peacock (mayūrī) is an enemy of the reptiles.

Bhānumatī This is an incomplete commentary by CHAKRAPANI-DATTA (C 1060) on SS, named after his elder brother, Bhānudatta, who also was an author. It extensively quotes BHATTARA-HARICHANDRA, a commentator on CS, and criticises the views of DALHANA, without however naming him.

The MSS is now in the British Museum, London.

It is also called *Tātparya-tīkā*.

Bhāradvāja He was an ancient medical authority, who was selected by the sages to learn medicine from Indra (CS *Sū Sth* 1,1, and BP). He is said to have gained longevity along with happiness — health — (āyur amitam labhe Bhāradvājah sukhānvitah), from this science, Veda, which was learnt from him by other sages who were intent on the welfare of mankind (prajā-hitam), and desirous of long life (dīrgham-āyuh) and improved health (vardhanam āyushah).

He was the son of Brhaspati and Mamatā, and the well-known Drona (teacher in archery and sage, in *Mahābhārata*) was his son. RV often mentions Bhāradvāja, which perhaps was a tribal name. Among the sages who learnt medicine from him was ATREYA (-PUNARVASU), who passed on the Indian therapeutics through AGNIVESA to CHARAKA. Chkp was aware of a view that Bhāradvāja and Ātreya were names of the same person, but he thought differently (on CS, *Sū Sth* 1,30), he points out that Ātreya has nowhere been referred to as Bhāradvāja in CS (kvachid api tantra-pradeśe akīrtanāt).

BP mentions that he wrote a medical work (tantra) explaining the *materia medica* and therapeutics (gunān dravyāni karmāni, 1,1) But there is no reference, anywhere else, for such a work, nor is the work extant. A work known as *Bhāradvājīyam* (Madras GOML, No 13178), dealing briefly with urinary disorders (meha-śukla-āma-lakshanaprakaraṇe) is a spurious ascription to him. Likewise a *Dravya-Viśeṣhaka-Bheshajakalpa* (same, No 13179-81) claims to contain his teachings (ity āha bhagavān Bhāradvājah).

VRNDA and SARNGADHARA have preserved a formula (phala-ghrta) of his

Bhāva-Misra He was a medical authority of the 16th century and author of *Bhāva-Prakāśa*, which is acclaimed as one of the three "minor medical treatises" (laghu-trayī)

Son of LATAKA-MISRA of Banaras (of Kānyakubja, according to GANANATH SEN), he also wrote a glossary of medicinal herbs (*Guna-ratna-mālā*), indicating their properties and other details. This work includes 150 more drugs than what the standard *Dhanvantari-Nighantu* contains. The MSS of this work is stated by JOLLY to be in the India Office Library, London [See BHAVA-PRAKĀŚA]

Bhāva-Prakāśa This is a standard medical text-book written by BHAVA-MISRA, the oldest MSS (Tubingen) which is dated A D 1558. It is an elaborate treatise in 3 books (*Khandas*) dealing with all matters pertaining to medicine, on the triple basis of 'cause, symptom and cure' (hetu-linga-aushadha). It became very popular and was extensively used by physicians. It was not only comprehensive but also of great practical value.

Book I (pūrva-khanda) is in two parts (bhāga) and six sections (prakaraṇa). The first part, which is extensive, treats of the origin of medicine, creation and evolution,

embryology, paediatrics, anatomy and physiology (following CS and SS), dietetics and pharmacology. It also deals with the practice of healthy habits during the day and in different seasons. A glossary of drugs is included here. The second part describes the medical terminology and measures, the five treatment procedures (pañcha-karma), cleansing and other methods relating to metals.

Book II (madhya-khanda) is in four parts, dealing with cures of specific diseases. An excellent account of pathology and therapeutics is to be found here.

Book III (uttara-khanda) is exceedingly short, consisting of but 11 pages in the MSS. It deals with elixirs and restoration of youth.

Largely it repeats earlier accounts and formulae, but the lists of diseases and cures have been updated. For instance, there is mention of 'phiranga' (a Sanskrit term referring to a foreigner) or syphilis, which spread in India owing to venereal contact with the Portuguese adventurers. It is described as prevalent in the country known as 'phiranga' (phiranga-saṃjñake deśe bāhulyena), and as an adventitious ailment (āgantuka) due to physical contact with the persons of that country (phirangino nga samsargāt). The ailment is described in its three stages: external (bāhya), internal (ābhyantara) and both (bahirantara). When it reaches the internal stage, it is regarded as difficult to cure. Chopa-chīnī (Smilax china), a drug imported into India around A D 1535, is prescribed as a cure. Mercury in the form of Calomel is referred to.

Likewise Soma-roga, a disease of women, not mentioned by Mādhava, has been described with its psychosomatic involvements (śokāc chāpi śramād api).

Another new disease described is "possession by the goddess Śītalā" (devyā Śītalā-yākrānta), viz., small pox (masūrī). He includes an incantation to this goddess among the remedies.

Among curative substances, opium

(ahiphenā) and almost all the minerals currently used are mentioned. Several new formulae are given.

The role of the Aśvini brothers in the history of Indian medicine has been highlighted in this work. We find here for the first time a mythical involvement of the divine dragon Śeṣha with Charaka. The account given here is: "During the Fish-incarnation of Hari, the Vedic lore was recovered, and was given to Śeṣha, who became proficient in medicine that was included in *Atharva-Veda*. Once when he came down to the earth to learn how human beings fared, he found them stricken with all sorts of ailments. Then, prompted by compassion, he appeared as the son of the sage Viśuddha and wandered about the world as an unknown emissary, dispensing medicine and effecting cures. Thus he came to be called Charaka, 'a wandering physician' (yataś chara ivāyāto na jñātaḥ kenachid yataḥ, *tasmāc Charaka-nāmasau vikhyātah kṣhiti-mandale*, I,1).

Probably this account preserves an old tradition concerning 'travelling healers' (For details see CHARAKA).

The author himself prepared a *materia medica* (nighaṇṭu) as a supplement to this work.

There is a commentary on this work by Jayadeva, son of Jayakṛṣṇa of Kāśhmīr. It is said that the commentary was commissioned by the then King of Kāśhmīr.

Bhāva-prakāśa-nighantu The pharmacological supplement to BHAVA-MISRA's celebrated work *Bhāva-prakāśa*, which has been counted among the 'minor three classics' of Indian medicine (the other two being *Chakradattam* or *Mādhava-nidāna* and *Śārṅgadhara-samhitā*). While the main text *Bhāva-prakāśa* follows *Śārṅgadhara-samhitā*, the 'nighantu'—portion follows *Madana-vinoda*. The work has had an abiding celebrity since its compilation some time after the 15th century and before the 17th

century.

The work consists of 23 sections dealing with drugs like haritakī (*Terminalia Chebula*), camphor, gudūchī (*Tinospora Cordifolia*), flowers, trees like vata, fruits like mango, metals (including zinc), cereals, vegetables, meat, food-preparations, drinks, milk, curds, butter milk, butter, ghee, urine, oils, honey, sugar-cane, and terms with multiple meanings (anekārtha-nāma). The work mentions the use of Chopā-chīnī (dvipāntara-vachā) to cure syphilis (*phuranga-roga*). The basic ideals of pharmacology have been summarized in a single verse (1,6,196). Plants have been classified (15,122) and the medicinal uses of parts thereof are described with examples (1,6,101-102). The soil is classified into four types according to caste-identifications (brāhmaṇa, kṣatriya, vaiśya and śūdra, 1,5,115). It would appear that the classical drugs of Indian medicine were already becoming difficult to obtain, for the work contains an elaborate list of substitute drugs (*pratinidhi-dravyas*).

The work has been frequently printed, and there are also some glosses on this. The recent gloss by Kṛṣṇa Chandra Chuneekar of Banaras (1969) is useful.

Bhela Also spelt Bheda, he was one of the six celebrated disciples of Atreya, who prepared their own medical treatises (tantra) incorporating the master's teachings. He was thus a contemporary of Agniveśa, whose treatise was later redacted by Charaka. His date is uncertain, but he is assigned to C 600 B C.

He is cited by the eminent medical writers of later times, such as Vāgbhaṭa, Ḍaḥaṇa, Chakrapāṇi-datta, Śivadāsa-Sena, Vijayarakṣita and Śrīkaṇṭha-datta. Vāgbhaṭa calls him a "Sage", *rshi* (AHR 6, 15), and appears to rely on his work to a great extent.

He refers to Ātreya as his own master (ity āha bhagavān Ātreyaḥ), and gives the other

names that his master bore Punarvasu and Chāndrabhāga There is a mention in his *Samhitā* that the royal sage Nagnajit learnt toxicology from Ātreya (Viśhayogeshu vijñānam provācha)

Gandhāra, the north-western frontier region of India, is frequently mentioned in his work It is likely that he belonged to this area

There is another medical author Bhāluki, who also wrote a tantra, and who is also cited as a medical authority It is sometimes supposed that Bhela and Bhāluki were identical persons But NS mentions Bhela and Bhāluki in the same sentence among the names of other medical writers (idānīm Bheda-Bhāluki Pushkala-Vānādīnāmalpa-tantra-vidām) The two, therefore, were different authors

Bhela-Samhitā : An early medical treatise belonging to the Ātreya-tradition, probably contemporaneous with CS, if not earlier, it has come down to us in a single mutilated MSS from Tanjore (Burnell's *Tanjore Cat of Skt MSS*, No 10773) Transcribed from an earlier *olai* MSS, no longer extant, this MSS is dated AD 1650 Based on the copy, Hoernle got made in Telugu characters, the work was published by the Calcutta University (*Journ Dépt of Letters*, vol IV) in 1921

The MSS, much damaged, abounds in lacunae It is "a meagre collection of fragments" (Gananāth Sen) There are now only 27 chapters out of the original 30 in Sūtra Sthāna, 7 out of 8 in Nidāna-Sthāna, 5 out of 8 in Vimāna-Sthāna, 8 out of 9 in Kalpa-Sthāna, and 7 out of 9 in Siddhi-Sthāna All the chapters in Indriya-Sthāna (12) and Chikitsā-Sthāna (30) are available It is impossible to reconstruct the original text, or to interpret the medical views of the author The work appears to have the same divisions as CS, namely, Nidāna, Vimāna, Śārīra, Indriya, Chikitsā and Kalpa-sthānas It is possible

that contents also were much the same But there is a quotation from SS in this work

Bhela and the formulae taken from his work are cited in the *Bower MSS* (Nāvanītaka) Bhela-yavāgu, a gruel prepared from the roots of five drugs, mixed with clarified butter and oil, and acidulated with pomegranates (sa-pāñcha-mūla ghrta-taila-mīśra sa-dādīma) for disordered vāta, the gruel made by old cereals (purāna-dhānya) would eliminate ailments due to disordered śleshman, the gruel prepared from white lotus, blue lotus and sugar (sa-padma-nīlotpala-śarkarā) would remove disordered pitta

The content analysis of the work can hardly be made But the gleanings show that the author was acquainted with the 'fourfold medicine' (Bheshajam chatushpādām, 4th Chap of ? Sth) physician, patient, drug, and nurse There is a prescription against suppressing the natural urges of evacuation, wind, metabolic heat, phlegm and semen (na vegān dhārayed dhīmān prāptān mūtra-purīshayoh, na vātasya na pittasya na śukrasya kaphasya cha)

A view found in this work is rather unique that mind is lodged in the brain (chittam hrdaya-samśritam) That the expression *hrdaya* ("heart") actually means 'brain' is borne out by the description of *hrdaya* found in the work itself In cases of insanity (unmāda), the mind as the faculty of sensations (manas) is first affected, then the intellect (chitta), and finally the faculty of determination (buddhi)

The number of bones in the human body is said to be 363, a number that is also given in *Kāśyapa-samhitā* Some medicinal preparations (yogas) from this book are found to be included in the *Bower MSS* (Nāvanītakam)

There are no commentaries available on this work, nor is there any mention of one ever written The work had lost its popularity even in the days of Vāgbhata, for he ex-

pressly states that medical treatises of 'ancient sages' like Bhela were no longer read (Bhelādyāh kim na pathyante', *AHr*, 6,49), while later redactions of Charaka and Suśruta were popular (muktvā Charaka-Suśrutau *ibid*)

Bhoja . Bhoja is a frequently quoted medical authority and author of a medical treatise called *Rāja-mārtanda*. The author styles himself a king, and is sometimes identified with the polymath Bhoja, the monarch of Dhārā, although the identification is uncertain

The work is in the nature of a collection of recipes and formulae (yogānām samgraho'yam), some of which are quoted by Dalhana, Vijaya-Rakshita, Śrīkantha-Datta and Chakrapāṇi-Datta

Bower Mss . Discovered (actually bought from a pair of ignorant Turkish pedlars) by Maj Gen H Bower in 1890 in a Buddhist Stūpa along an old trade route to China, these Sanskrit manuscripts are an important link in the history of Indian medicine (ed by A F R Hoernle *Archaeological Survey of India, NIS*, Calcutta, vol 22, 1893-1912) Of the different texts that are included in this collection, three pertain to medicine

Written on 51 birch-bark leaves, cut in the manner of South Indian palm-leaves, in Gupta characters belonging to the 4th Century A D and possibly by four scribes (according to Hoernle), the MSS are, palaeographically, assigned to a period between A D 350 and 475 They are Buddhist in general nature, and were probably carried there by the Buddhist monks who travelled extensively in Central Asia during the early centuries after Christ, and were responsible for the spread of Indian culture in that area, which was included in the dominion of Samudra-Gupta

The language of these texts is old Sanskrit, freely mixed with Prākṛt, reminding us of the language of Buddhist texts like *Saddharma-*

pundarīka The verses are mostly in the usual *anushtubh*, *trishtubh* and *āryā* meters Sometimes the poetic quality borders on the elegant, especially in the section on the medicinal value of garlic (*laśuna*) There are also charms and spells, panegyric verses and prescriptions

The medical texts are mainly two (1) *Laśuna-kalpa*, an incomplete treatise on the value, uses and preparations of garlic (*laśuna* or *rosona*, *Allium Sativum*), and (2) *Nāvanītakaṃ*, the quintessence of medical formulae The third text, consisting of 72 verses, gives 14 formulae The dominant feature of all these works are selected formulae for general health and for treating specific ailments

These formulae are taken directly from three principal sources Charaka (29), Bhela (15) and Suśruta (6); the remaining 44 are from various medical authorities, some named and others not Besides the three eminent masters mentioned above, the MSS refer to the formulae ascribed to the sages, Atreya, Kshārāpāṇi, Jatūkarna, Hārīta, Kāśyapa, Jīvaka, Agastya, Kankāyana, Nimi, Uśanas, and Dhanvantari There are many formulae in the name of Kāśyapa It is interesting that the extracts from CS in this collection are drawn only from the portions that were available to Drdhabala, and not from the portions that he redacted or supplied

The most important text in the MSS is known as *Nāvanītaka*, (lit 'the Butter that is taken out, after churning the curds') in sixteen chapters The name signifies that the available books on Ayurveda had been examined carefully to identify and isolate the most essential and well-known formulae of sages (*rshis*), which are collected here The prescriptions and preparations that are listed here are actually taken from several earlier kalpas and tantras

There are accounts of clarified butters and medicated oils of different kinds, formulae,

enemas, tonics, gruels, aphrodisiacs, collyriums, and hair washes (chap 1 to 10) Methods of using *Chebulic Myrobalan*, bitumen, plumbago-root are also given (11-13) Treatment of children is the theme of chapter 14, treatment of diseases of barren women and those with children (15 and 16) is also given

The outstanding matter to be found in the MSS is the detailed account of the medicinal value of garlic (*Allium Sativum*) There is to be found here praises of this drug which became popular in India probably owing to the contact with foreigners like Śakas and Kushānas during the Gupta age (hence the name *mleccha-kanda*) The word, *Laṣuna* (or *Rasona*), which also may be of non-Sanskrit origin, is derived here as signifying that all the tastes (*rasa*) excluding salt (*lavaṇa*) are present in it (*lavana-sūnya* or *lavana-nyūna*, *rasona-rasa-nyūna*, cf BP, *pañchabhiś cha rasair yukto rasenāmlena varjitah, tasmād rasona ity ukto*) The first of these MSS, which closes abruptly with the 5th section, deals solely with garlic

Garlic is said to be an effective remedy for several ailments, principally tuberculosis (*rāja-yakshma*) and enlarged cervical glands (*ganda-mālā*), it increases vitality (*rasāyana*) Its intense odour (*ugra-gandha*) destroys parasites (germs, *kṛmī*) It would appear that there was then a custom of tying a string of garlic bulbs above the main entrance of the house to ward off ill-health (*harṁyagreshv atha toraneshu valabhīdvāreshu chāvishkṛtāh, kandādyā laṣuna-srajo virached bhūmau tathavārcchanam*) The beneficent seasons for the use of garlic are also mentioned winter and spring (*‘ayam iha laṣunotsavah prayojyo himakāle cha madhau cha mādhave cha*)

The MSS contain charms, spells and hymns pertaining to *Mahā-māyūrī*, *Mātangī*, *Vighna-rājñī* and *Aparājītā*, all Buddhist folk goddesses The *tāntric* element is discernible in these passages, and it reflects the

religio-medical approach that was prevalent in the centuries immediately after Christ, an approach that is not altogether absent in CS, SS and *Kāśyapa-saṁhitā*

We find that the essential framework of Indian medicine (the concept of *tri-dosha*, the importance of digestion in health, the nomenclature of diseases, the variety of medicinal preparations, etc) can be seen even in these MSS Among diseases, small pox, and among medicinal substances, quick-silver and opium, have not been mentioned

Brahmā The mythical originator of *Āyurveda*, he was associated with *Atharva-Veda* He is said to have taught medicine to his son *Dakṣha-prajāpati*, who in turn taught it to the *Aśvins* The *Bower MSS* mention that the *Aśvins* were taught by *Brahmā* himself regarding the properties of *Chebulic Myrobalan* (*Hoernle*, XI p 164)

He is said to have introduced into Indian medicine the employment of horn (*śṛṅga*), leech and sharp instrument (*Vrana Chikitsā*, Government Oriental Manuscripts Library, Madras, 23,132-42)

Brhadyoga-Taranginī This is a gigantic compendium in 148 chapters, dealing with all topics concerning Indian medicine. The author was *Trimalla-bhatta*, a Telugu Brahmin from *Tripurāntaka* town (?) The date of the work is uncertain But he gives extracts from the works of *Śārṅgadhara* but does not refer to *Bhāvaprakāśa* It may, therefore, be assumed to have been compiled some time between the dates of *Śārṅgadhara* and *Bhāva-miśra*, viz , in the 16th century

The work does not claim to be anything but a compilation from a large number of earlier medical works (*ātra granthe bhūritantrāṭṭa-sāre*), including CS, SS, *AHr*, *Vrnda*, *Tisāṭa* and *SaS* The topics covered are general considerations of health, illness

and treatment (ch 1), anatomy and embryology (ch 2), measures (ch 3), terminology (ch 4), treatment procedures like oleation, sudation, emesis, purgation, and so on (5-12), preparation of food, articles of food, cooks and kitchen (13, 14 and 16), proper conduct during day and night and in seasons (17, 18 and 15), *materia médica* (19-40), medical uses of metals and mercury (41-43), clinical examination (44-53), curability or otherwise of diseases (54), manner of taking medicine (55), diagnosis, symptoms and treatment of specific diseases (56-147), and the treatment of diseases in general (sarvaroga-chikitsā 148)

Many Yunāni prescriptions are found included here. The employment of opium (*ahiphenā*) and cinnabar (*darada*) has been mentioned. This is probably the earliest work in which Śamkha-drāvaka (a solvent for dissolving shells) has been referred to.

Brhan-nighantu-ratnākara. This is a voluminous compendium, as the name suggests, of matters of practical medical interest (Dattarām Chaube, Venkateshvara Press, Bombay 1891). Along with classical methods of examination and treatment, many modern methods (e.g., urine examination according to Western physicians) and drugs (e.g. tobacco) are incorporated.

The book is in six sections. Additional matter in the form of an elaborate and descriptive *materia medica* (nighantu) in two parts (7th and 8th section) has been compiled by Lālā Śālāgrām. Names of drugs in Sanskrit, Latin, English and several modern Indian languages have been given.

C

Chakradattam This work has been modelled after VRNDA's *Siddha-Yoga*, but incorporates numerous new recipes and formulae. Besides the usual drugs, metallurgical preparations are also given here. In fact, the work seems to have been written primarily to annotate Nāgārjuna's metallurgical science (loha-śāstra), which is described as 'very obscure' (atī-gahanam).

The actual name of this work by CHAKRAPĀNI-DATTA is *Chikitsā-samgraha*, but to distinguish it from another work of almost the same name (*Chikitsā-sāra śamgraha*) by VANGA-SENA, it is familiarly known as *Chakradattam* after the author's name. It is very popular in the northern regions of the country, especially in Bengal.

It is an independent work of the author, whose fame rests mainly on his commentary on CS (*Āyurveda dīpikā*) although he wrote other works like *Bhānumatī*, incomplete commentary on SS, *Dravya-guna-samgraha*, and a compilation of drug-details, a summary of treatments.

There is a commentary on this work, *Ratna-prabhā* by NISCHALA-KARA, (12th century), based on which ŚIVADĀSA-SENA wrote another gloss, called *Tātparyachandrikā* (15th century) [See CHAKRAPĀNI-DATTA]

Chakrapāni-Datta He was the author of a commentary on CS called *Āyurveda-dīpikā* (*Charaka-tātparya-tīka*), which is widely relied upon by Indian physicians. It was first published in 1892, and since then all standard editions of CS are equipped with this commentary. He was a native of Bengal, son of Nārāyana-datta who was supervisor

of the royal kitchen (rasavatyādhikārī) and counsellor to the chieftain of Gauda, Nyapāla-deva (c A D 1060) His teacher was one Nara-datta, whose identity is uncertain

His other works are

(1) *Chikitsā-samgraha* (familiarily known as *Chakradattam*), on which there is a commentary by Śivadāsa-sena (*Charaka-tattva-pradīpikā*) this work borrows from VRNDA's *Siddhayoga* It is very popular with the physicians It seeks to present a comparative account of the two major medical traditions in India — the Ātreya (therapeutic) and the Dhānvantara (surgical) There are two commentaries *Ratna-prabhā* (Nīśchala-kara's) and *Tattva-chandrikā* (Śivadāsa-sena's)

(2) *Dravya-guna samgraha*, a pharmacological work dealing with drugs prescribed in CS, SS and AHR, and with articles of food for health and hygiene

(3) *Bhānumatī*, an incomplete commentary on SS, fragments of which have survived (publ Lakshmīrāma-nidhi-grantha-mālā, Series I contains only Sūtra-sthānam)

A glossary of medical terms in Ayurveda (*Āyurveda-śabda-kosā*) has been ascribed to his authorship

Calcination of some metals has been mentioned by him, but not opium or pulse-examination

Charaka Regarded as one of "The Ancient Three" (Vṛddha-trayī) of Indian medicine, Charaka is the principal exponent of the medical system known as KĀYA-CHIKITSĀ (general therapeutics or internal medicine) The core-text of Āyurveda, namely, CHARAKA-SAMHITĀ (which is also the earliest medical treatise in India) has been ascribed to him

The identity of CHARAKA is altogether uncertain We are not even sure if that was the personal name of the author who was principally responsible for the extant version of CHARAKA-SAMHITĀ It has been sug-

gested (in *Brhajjātaka*) that the medical expert who travelled from village to village not only administering medicines but also teaching the medical science was called 'Charaka' (wandering physician) by the people, even as the surgeon was known as 'Dhanvantari'

The expression 'Charaka' has been employed in this sense even in the Vedic corpus Charakas were scholars who were affiliated to the *Kāthaka-Samhitā* and *Kṛṣṇa-Yajurveda* A prominent sage belonging to this Vedic branch, VAISAMPĀYANA, was known as Charaka, and his disciples were also called Charakas (according to *Kāśikā-vṛtti* on Pāṇini 4,3,104) An early Upanishad (*Brhadāranyaka*, 3,3,1) refers to the wandering scholars (Charakas) in the Madra country Three classes of students were recognized (1) those who, without a formal initiation, served the teacher and lived with him (mānava), (2) those who resided with the teacher after formal initiation and as regular students (antevāsi), and (3) those who, having completed a course of study under a teacher, went to other teachers for higher study for short durations (charaka) The ancient grammarian PĀNINI has an aphorism pertaining to the words denoting the first and third classes of students (5,1,14 mānava-charakābhyām khang) Charaka in this context means a wandering scholar

In the early Buddhist lore (e g , *Śonaka-jātaka*, 5,2,427) there are references to 'wandering scholars,' getting admitted to educational institutions like Takshaśilā as 'casual students' (chārikam charantā) Takshaśilā in the north-western corner of the country, for instance, had also a medical college which was headed by an Ātreya, and where the renowned contemporary of the Buddha, JĪVAKA, the paediatrician, was a student Charaka, during the centuries even before Christ, was thus a term signifying wandering physicians and medical teachers

A more specific reference to a particular

physician, who was eminent both as a physician and as an author, can be gleaned from the legendary account given in *BP* (1,1) Vishnu, in his fish incarnation resuscitated the Vedic lore from oblivion, and his attendant Ananta (Śeṣha, the Dragon representing Time) became proficient in the Vedic lore, which included medicine (in *Atharva-veda*). Once Ananta chanced to descend on the earth and wander about as a 'roving ambassador' (chāra) to know how human beings fared. He was overcome by pity after seeing humanity being afflicted with numerous ailments and people dying prematurely, so he took birth as the son of a sage, Viśuddha by name, and administered medicine to the ailing folk, he also taught the medical science. He travelled continually and reached the patients wherever they were. Because he came to them as a welcome messenger (chāra), no one knew from where, he became famous as 'the wandering physician' (Charaka) [See BHĀVA-PRAKĀŚA]

The work thus makes him the world's first physician. But the account here curiously closes with Charaka having compiled and redacted the medical treatises (tantras) composed by the students (like AGNIVEŚA) of the sage ĀTREYA. This detail, however, agrees with the traditional account of the origin of Indian medicine, where Charaka comes only after ĀTREYA, DHANVANTARI, INDRA and the ASVINS.

The Indian tradition places the original author of CHARAKA-SAMHITĀ nearly a thousand years before Christ. PATAÑJALI, the great commentator on PĀNINI and the celebrated author of *Yoga-sūtra*, who lived in the second century B C is claimed to have redacted the original treatise of Charaka (cf CHAKRAPĀṆI-DATTA and BHOJA among other medical authorities). But Patañjali's medical work is no longer available, and it is impossible to confirm or deny the claim. There is, however, a citation from this work by a later grammarian NĀGESA-BHATTĀ

(*Laghu-maṇjūshā*) regarding the definition of a reliable authority (*āpta*).

The Chinese translation of the Buddhist scripture (*Tripitaka*) refers to Charaka having been the court-physician of the Kushāna King Kanishka. The exact date of Kanishka is a matter of controversy, but historians are inclined to assign his reign to a period between 58 B C and A D 144. This reference would make Charaka a contemporary of the poet AŚVAGOSHA and the alchemist NĀGĀRJUNA.

The NISI Chronology Committee suggests that the original form of CS can be assigned to about A D 100. There is an alternate suggestion that the redaction of AGNIVEŚA's treatise by Charaka (now known as CHARAKA-SAMHITĀ) is to be dated 175 B C. The language and style of the available text supports the latter suggestion.

Considering the fact that the available text makes frequent mention of the tribes and places of northern and north-western parts of the country, it is probable that Charaka (the redactor) hailed from this region. The tribes mentioned (CS, *Chikitsā*, 30, 316), namely, Pahlava, Vāhlika, Chīna, Śūlika, Yavana, and Śaka are all West Indian. In those days, the geography of the country around the Hindukush included Vāhlika (along the northern and western directions), Kamboja (along the northern and eastern directions), Gandhāra (along the southern and eastern directions) and Kapisa (along the southern and western directions). It included also parts of Central Asia. This explains how the medical tradition expounded by Charaka had a base wider than the later confines of India.

Nothing is known about the life and career of Charaka. His father's name is given as Viśuddha, a saintly scholar in the Vedic lore, in the legendary account preserved in *BP*. Who Charaka's teacher was is not known. AGNIVEŚA, whose treatise Charaka undertook to redact, stands separated

from Charaka by several generations

Besides CS, two works are ascribed to his authorship a commentary on *Agniveśa-tantra* and another on *Krshṇa-Yajurveda*, the text of the Vedic school to which he appears to have belonged But the ascription is unfounded

Charaka-Samhitā. This is the earliest medical treatise in India that has come down to us more or less in an excellent state of preservation, although not in its original form It is an elaborate and comprehensive manual, dealing with different aspects of disease and treatment And it has served as the foundational work for all subsequent medical literature and practice

The title of the work in the most authentic edition (Nirnaya-Sāgar, Bombay, 1922) is given as *Charaka-Samhitā*, being the work composed by Agniveśa based on the teachings of the sage Punarvasu, as (tantra) redacted by Charaka and Drdhabala Thus four authors have been involved in the work in its extant form Punarvasu (–Ātreya), Agniveśa, Charaka and Drdhabala Tradition makes Punarvasu-Ātreya the teacher of six medical masters of whom Agniveśa was one Each of these six wrote a treatise, but Agniveśa's work has served as the source-book for this *Samhitā*, his *tantra* is no longer available in its original form What we have now is its redaction first by Charaka and subsequently by Drdhabala

The authenticity of the ancient teaching is affirmed by the aphoristic statement at the beginning of each chapter “Thus said the revered Ātreya” (iti ha smāha bhagavān Ātreyaḥ) And the colophon of each chapter till CS, Ch 9, reads “Thus ends

chapter in the work of Agniveśa as redacted by Charaka” (iti Agniveśakṛte tantre Charaka-pratisamskrte), and then on “Thus ends chapter in the work of Agniveśa as redacted by Charaka, and the

missing portions being supplied by Drdhabala” (aprāpte Drdhabala-sampūrīte) [See DRDHABALA for his contribution]

The nature of redaction has been indicated in the text itself while defining the expression Samhitā “What has been briefly said will be elaborated, and what has been elaborated will be summarized, the redactor will thus modernize the ancient text” (CS, S1-sth , 12, 36) Extreme brevity and prolix elaboration are regarded as defects in a scriptural text, and they are sought to be avoided by the redactors Modernization is with reference to the appropriate elaboration and summarization, in conformity with the needs of contemporary students

CS is in eight divisions, or *Sthānas* and each bears a descriptive title A *Sthāna* in its turn is divided into chapters, also bearing descriptive captions It is an extensive work, and its volume exceeds that of its celebrated companion, *Suśruta-Samhitā*, although the surgical matter is entirely left out in the former

The eight divisions are

(1) *Sūtra-Sthāna* (also called *Śloka-Sthāna*) in 30 chapters This is the most important of the divisions, and deals with the entire subject-matter in a synoptical manner There is a conventional grouping of the chapters in seven quartets (chatushka) The first (Bheshaja-chatushka) deals with general introduction to health and medicine, longevity, gruels, ointments, drugs and purgatives The second (Svastha-vṛtta-chatushka) covers general hygiene, preventive medicine, personal health, dietetics and instructions against the suppression of natural urges The third (Nirdeśa-chatushka) explains the four aspects of effective treatment (physician, medicine, patient and nurse) and the three goals towards which human conduct is directed (health, prosperity and spiritual welfare) The fourth (Kalpanā-chatushka) pertains to

measures, oleogenous treatment, diaphoresis, provisional treatment and physicians. The fifth one (Roga-chatushka) deals with the diseases of head and heart, swellings, abdominal ailments and major illnesses. The sixth (Yojanā-chaṭushka) deals with unfavourable human types, alternatives, ailments arising out of excesses, and illnesses caused by defilement of blood. The last one (Annapāna-chatushka) actually contains six chapters, dealing with general aetiology of ailments, views concerning taste (rasa), food and drink, dietetics, 'seats' of life. The last chapter contains an analytical content of the entire book.

(2) *Nidāna-Sthāna* (8 chapters) deals with general pathology of eight major diseases: fevers (jvara), haemorrhage (rakta-pitta), tumours (gulma), urinary ailments (prameha), skin troubles including leprosy (kushtha), phthisis (śosha), mental aberrations (unmāda) and epilepsy (apasmāra). Each chapter furnishes details concerning the disease-types, causation and manifestation of diseases, diagnostic aids, and treatment procedures. Helpful hints are given to the attending physician.

(3) *Vimāna-Sthāna* (8 chapters) deals with miscellaneous matter: chemistry and physiology of rasa (taste), three major divisions of the stomach, epidemics and infectious ailments, the three diagnostic procedures (observation, inference and testimony), the circulatory, digestive and evacuatory functions, varieties of disturbances in body and mind together with their prognostic assessment, types of patients, varieties of bodily parasites (krimi), and matters pertaining to medical education.

(4) *Śārīra-Sthāna* (8 chapters) deals with general human constitution, progeny, pregnancy, foetal development, growth, physiological framework, life and death. There are philosophical discussions concerning man and the environment. It also enumerates the anatomical parts of the body, and

in the last chapter we find an account of midwifery.

(5) *Indriya-Sthāna* (12 chapters) deals mainly with symptomatological diagnosis and prognosis. The major part of the division is devoted to the ascertainment of the approach of death by various signs and symptoms.

(6) *Chikitsā-Sthāna* (30 chapters) is the most valuable division for the practising physician as it contains numerous drug-formulae and prescriptions for long and healthy life. It includes details concerning rejuvenation (rasāyana) and virilification (vājīkarana).

Treatment of diseases like fever, tumour, diabetes, phthisis, insanity, epilepsy, abdominal ailments, piles, diarrhoea, anaemia, hiccough, asthma, vomiting, erysipelas, abnormal thirst, delirium, diseases of bladder, heart and head, nervous ailments, leprosy and diseases of women, are dealt with here.

(7) *Kālpa-Sthāna* (12 chapters) is the division that deals with drugs (especially for emesis and purgation), formulae, and pharmacy.

(8) *Siddhi-Sthāna* (12 chapters) deals with the methods of effective treatment, especially, with the classical Pañcha-Karma.

Although the work refers to the eight-fold medicine (Ashtāṅga-Āyurveda), it principally deals with only one branch, viz., Kāya-Chikitsā. It casually deals with the other branches, except major surgery (Śalya) which is altogether excluded.

The work reveals the author's extensive acquaintance with plant, mineral and animal resources for treatment of diseases. There is a clear preference for drugs of vegetable extraction [See OSHADHI].

The style of the work is direct and engaging, the language has close links with the *brāhmaṇa* passages of the Vedic Corpus. There are long prose passages as well as

short sentences together with strings of verses. Two philosophical systems Sāṃkhya and Nyāya are heavily relied upon (CS, Śā, I and VI, 4,4,12). The Sāṃkhya that we find in this work is more ancient than the one found in Īśvara-Kṛṣṇa's *Sāṃkhya-Kārikā*. The Yoga system also is referred to, but the Yoga advocated here is slightly different from Patañjali's (CS, Śā, 5, II-26). The Veda is accepted as reliable authority (āptāgama), but not making much of it. Good conduct is advocated as the necessary precondition for health. While the general attitude is rational and treatment prescribed is largely drug-oriented, there is also a suggestion for reinforcement by rituals and worship. Some divinities (Indra, Brahmā, Vishnu, Lakshmī, Viśvakarmā and Vṛsha-dhvaja or Śiva) are also mentioned, but not with any importance attached to them. Vishnu-sahasra-nāma has, however, been commended as a cure for fevers (CS, Ch 3, 312).

The work comprehends mainly all the lessons given by Punarvasu-Ātreya to Agniveśa and others in assemblies of sages who were medical authorities (e.g., CS, Sū, 25, 1-29 and 26, 3-9). The work mentions as many as 60 earlier medical authorities, many of them are well-known sages like Vāśishtha, Jamadagni, Bhṛgu and Vamadeva, but there are some who are little known, like Kāpya, Śaraloma, Vadiśa and Hīranyāksha. The medical views of many of these sages are also recorded.

The work elaborately discusses the physiology of the three Doshas, human anatomy, diagnosis and prognosis of diseases, foetal growth during the months, and medical education.

His account of anatomy, however, is elementary, the total number of bones (including teeth) being 360, and muscles are regarded as merely fleshy masses. The structures of the heart and brain appear to be little understood, and the lungs are not

associated with respiration.

During the foetal growth, limbs are said to be initially differentiated in the fourth month, awareness is structured in the fifth and intelligence emerges as an organismic function in the sixth.

His *materia medica* is extensive with 341 drugs of vegetable origin, 177 drugs of animal origin and 64 drugs of mineral and metallic origin. He has also classified the vegetable drugs according to the parts of the plants utilized: roots of 16 plants, fruits of 19 plants and juice of three barks are of medicinal value. He has divided plants into 50 groups, each having over 10 plants (CS, Sū, Sth, 1,4).

"Charaka was a person of great culture and intellect and prepared his work for the general guidance of the humanity in the ways of life and health." And in this sense, CS is said to be "a far more interesting work" than SS.

There are numerous commentaries on this work, many of which however, are not extant. The most celebrated and frequently printed commentary is by CHAKRAPĀNIDATTA, known as ĀYURVEDA-DĪPIKĀ (Or *Charaka-tātparya-tīkā*). Among other commentaries which were well-known once but have since been neglected, lost or mutilated are, BHATTĀRA-HARICHANDRA'S *Charakanyāsa* (fragmentary MSS, first three chapters of CS, Sū, GOML, No 13092, about 6th century), JAIJATA'S *Nirantara-pada-vyākhyā* (about A.D. 875), ŚIVADĀSA-SENA'S *Charaka-tattva-pradīpikā* (around A.D. 1460) and SVĀMĪ-KUMĀRA'S *Pañjikā* or *Pañchikā* (GOML, vol 23, No 13091, incomplete) merit mention. References to several other commentaries that have been irretrievably lost are available: they are by Patañjali, Īśāna-deva, Vyāpya-Chandra, Vakula, Nara-datta, Guṇākara, Govardhana, Bhīma-datta, Jina-dāsa, Jaya-nandi and Īśvara-sena. Among the more recent commentaries are NARASIMHA KAVIRĀJA'S

Charaka-tattva-prakāśa, *Kaustubha*, YOGENDRANĀTHA SEN'S *Charakopaskara* (incomplete) and GANGĀDHARA-KAVIRATNA'S *jalpa-kalpa-taru*

The work had been translated into Persian and later into Arabic by the 8th century (mentioned in *Fihrist* A D 987) al-Beruni, who incidentally held that Charaka was the most ancient of Indian medical writers, relied on the Arabic translation of *CS* by Ali-ibn-Zain of Tarbistan. *Sharaka Indanus* is to be found in the Latin translation of Rhazes (b A D 680) and Avicenna

Among the early editions of *CS*, prominent ones are by Jībānanda Vidyāsāgara (Calcutta 1877), Gangādhara-Kaviratna (Berhampur 1879), Harinātha Viśārada (1895) and Vāman Keshava Dātār (Nirnaya-sāgar, Bombay 1922) The work was translated into English by A C Kaviratna in 1920 (Calcutta) A six-volume edition of the text with transl into English, Gujarāthi and Hindī was brought out in 1949 (Jāmnagar, Gujarat Āyurvedic Society)

Charakopaskara. An incomplete but valuable gloss on *CS* by Yogīndranāth-Sen (1871-1918), a leading physician of Bengal The work was designed to help the student in understanding *CS* aright

Chikitsā-kalikā This is a text book by TĪSATA (c A D 500, mainly in the nature of a compendium of well-known formulae (yoga))

The work is in 400 elegant verses (vr̥ttasāis̥ chaturbhīh) dealing with general therapeutics (kāya-chikitsā) There are accounts of other branches of medicine, like surgery, bhūta-vidyā and rejuvenation, but they are exceedingly brief Even the anatomical information is scanty and cursory The formulae are extracted from earlier authorities like Bhela, Kāśyapa and Śukra

It reminds one of *Nāvanītaka* but is more elaborate The prescriptions are mostly from plants and trees

There is a gloss (vivṛti) on this work by the author's son CHANDRATA The work has been quoted in *Vīrasimhāvaloka* (1383) [See TĪSATA]

Chinese Medicine Medicine in China is said to have originated with two patriarchs Shen-nung (2757 B C, author of the first *Materia Medica* in the world) and Huang-ti (2697 B C, author of the *Canon of Medicine*) Both are legendary heroes, and Chinese medicine really dates from about 205 B C, when the earliest physician, Chang-Chung-K'ung, lived and practised He wrote a treatise on fevers, their diagnosis, clinical examination, symptomatology, course, management and treatment Contemporaneous with him was the first surgeon in China, Hua-tu, who employed anaesthesia These two may be described as the Charaka and Suśruta of China

The foundation on which the entire Chinese medicine rested and developed is the Taoist doctrine of the twin forces of 'Yin' and 'Yang', which constitute and govern the entire creation Formulated around 300 B C, the doctrine spoke of the two forces as curiously antagonistic and complementary 'Yin', representing 'Earth', is dark, weak, feminine and passive, it corresponds with the Moon 'Yang' on the other hand, represents 'Heaven' and corresponds with the Sun, it is light, strong, masculine and active Human body, being a miniature model of the universe, not only accommodates these two fundamental forces, but is subject to them

Balance between the twin forces means health, and its disruption can occur owing to the momentary weakening of one of the five elements that enter into the constitution of the body water, fire, wood, metal and earth There are five organs intimately

related to the five elements kidney, heart, liver, lungs and spleen, in order. The disruption of the balance is located principally in one or other of these five organs.

The identification of the organ in which the disturbance has occurred is made possible by examining the pulse. Pulse-examination is an important detail in Chinese medicine. The other examinations of colours, viscera, bowel and bodily appearance follow closely the pulse-examination. Each hand has three sets of pulses connected with the organs, and each pulse in its turn has an outer and an inner pulselet, the twelve pulses being thus connected with the entire body.

The normal rate of pulse beats was considered to be four, viz., time taken for the physician to complete an act of breathing (one inhalation and one exhalation). The pulses are three in number on each hand, technically designated as 'inch', 'bar', and 'cubit'. As they are felt by the physician with light touch or with some pressure, they indicate the condition of the twelve major parts of the body wherein disturbances are likely to occur. As the physician feels the pulse, he watches whether the pulse is superficial or deep, even or irregular, gentle or frisky.

The pulse-examination is essentially of diagnostic value. It gives the physician the clue as regards the part of the body in which the disease has originated, and also whether it is the 'Yin' or 'Yang' that is disturbed. It can also be a prognostic aid, it will enable the physician to assess the curability or otherwise of the ailment. Further, the line of treatment that the physician must prescribe is also indicated.

The aim of the treatment would be to restore the natural balance between the two fundamental forces 'Yin' and 'Yang'. The treatment is divided into two major kinds: preventive and curative. The former is given the greater importance. Diseases are

prevented (or health is maintained) by the individual being harmoniously adjusted to nature, viz., following the Tao. A simple life, eschewing excesses and observing the laws of nature, are advocated. Treatment of the 'spirit' (*Ch'i*) which is thereby vouchsafed is the essence of preventive medicine.

The food that we eat and the habits that we cultivate regarding it can constitute a mode of treatment that nourishes the physical body. Proper diet and right habits of eating can treat the ailments without any medicine. Food, which like the body is made up of the five elements, is distinguished by five tastes: sweet, sour, pungent, bitter and salty. Each taste is a mode of nourishment. The proper diet balances all the tastes.

The treatment procedure that is curative in character relies on drugs. Each drug is regarded as a judicious mixture of the two forces 'Yin' and 'Yang', so that the disturbed balance between them in the body (which the disease in fact means) is corrected and restored. Herbal drugs also dominate Chinese medicine. The first *Materia Medica* which was composed around 2000 B.C., was later expanded to include 400 kinds of herbs. In the 16th century, it came to contain 8000 prescriptions with 2000 drugs, the majority of which was from the vegetable kingdom. During the early part of the 19th century, *The Names and Virtues of Plants* ran into 60 volumes!

The basic idea in treatment is that most of the illnesses are caused by an imbalance between 'Yin' and 'Yang' reflected in the disharmony of the five elements known as 'dyscrasia', owing to the external influences of weather and season (in terms of wind, fire, heat, cold, dryness or humidity) or by internal factors (joy, anger, desire, surprise, grief, fear or worry). The treatment is directed towards restoration of the balance. Herbs, being most in line with the Tao, are regarded as most effective in correcting the

'dyscrasia' of the elements

An alternate line of treatment is 'acupuncture', which has made Chinese medicine famous all over the world. Also based on the theory of the interaction of the twin principles of 'Yin' and 'Yang', this system works on the rather unusual conception of surface anatomy.

The two forces are unequally distributed in the physical body, and the strife between the parts in which 'Yang' is superfluous, and the parts in which 'Yin' is deficient manifests itself as disease. The two forces together with the superfluity or deficiency are carried to different parts of the body along 12 (or 14, according to some) channels which distribute blood and breath throughout the body. The channels are connected with all the vital organs. The surface anatomy accepted by the advocates of acupuncture recognizes 365 (or 349 in another account) vital spots distributed all over the body, especially in the head and the extremities, and it is at these spots that the channels (which are deep within the musculature) surface.

Breath and blood, in a healthy person, would flow evenly within the channels, and the vital spots would reflect this smooth flow. Pulse-examination reveals this state of affairs as also any disturbances in the flow.

When the vital forces that course through the channels become superfluous or abundant, tension is felt at the spots in the shape of blocks. When they become deficient, the spots reveal a certain slackness. Puncturing the chosen spots would rectify the error. The blocks are supposed to be caused by the accumulation of foul breath at these junctures, puncturing in that case would help the excess air to escape, thus relieving the tension of the breath. When the flow is deficient, puncturing would energize and stimulate. In either case, the disturbed coordination of 'Yin' and 'Yang' is corrected.

Proper puncturing (also called 'needling') is accomplished by special needles made of gold, silver, copper or steel. There is a mention of nine different kinds of needles in use. The kind of needle to be used, choice of the spots to be punctured, the discovery of the deficiency of 'Yin' or the superfluity of 'Yang', the amount of pressure to be exerted while needling, the direction in which the needle should slant (along the vital flow or against it) and so on are some of the complex aspects of this art of healing.

All types of diseases are claimed to be treated and healed by acupuncture. The *Canon of Medicine* (*Nei-Ching-su-Wen*) which Huang-ti is said to have written around 2690 B.C., gives a detailed account of the ailments that are sought to be cured by acupuncture. It also contains a comprehensive account of the art of acupuncture, and of its theoretical foundation ('Yin' and 'Yang').

The same author, who is regarded as the 'Father of Chinese medicine', also prescribes another treatment-procedure to be employed along with acupuncture. This is known as 'moxibustion' (also called 'Moxa'), after the material from the plant *moxa* (*Artemisia vulgaris*) that constitutes the main therapeutic ingredient. The leaves of this plant are dried and powdered and rolled into the shape of cigarettes or cones. The spot on the skin is chosen precisely as in acupuncture, and the cigarette or cone is placed in it vertically and is lighted, the cigarette is allowed to burn for a specified period (up to 30 min.), and the heat is said to draw off the ailing condition that is deep within the channels that carry the 'Yin' and 'Yang' forces. The heat that is principally employed here for the therapeutic purpose shares the property of 'Yang' (masculine and active force). It will, therefore, correct the superfluity of 'Yin'. The cigarettes are sometimes allowed to burn long enough to

cause a blister on the spot

The technique of moxibustion is said to be older than acupuncture, and Confucius himself is supposed to have evolved this technique. However, there are conditions in which both are employed, and these are explained in great detail in the classic *Ni-Ching*. Both the techniques are based on the original Taoist idea of twin-forces ('Yin' and 'Yang')

Although surgery began in China in the distant past, it did not make a headway, and its appeal gradually weakened, probably because of the doctrinal emphasis on non-interference with nature. Therefore, the anatomical knowledge of the ancient Chinese was also limited. But the exceedingly rich pharmacopoeia that they developed and the highly sophisticated techniques of acupuncture and moxibustion that they evolved and perfected more than compensated for this lacuna.

One can readily recognize the numerous correspondences that exist between Chinese and Indian medicine. The basic ideas appear to be almost identical: the individual being a miniature model of the universe, the elemental constitution of the organism, the life-force working itself through the individual, the concept of strategic spots in the body, the need for living in close conformity with nature, the medicinal value of food, the twin energy-strands, the emphasis on restoration of balance as the physician's task, the importance attached to personal hygiene and prophylaxis, the reliance on herbal drugs, and the unfavourable outlook on surgery.

It has recently been discovered that acupuncture also was practised in ancient India. Massaging (*anga-mardana*) was another art that was developed as auxiliary to medicine both in China and India. Likewise the practice of modulated breathing (*prāṇāyāma*) prescribed in Yoga as well as Āyurveda was also advocated in China as

early as 2000 B C

It was only in China and India that medicine was provided with a sound philosophical foundation, and an attempt was made to relate the therapeutic practices with theoretical constructs.

D

Dalhana. Dalhana or Dallana is the author of the celebrated and complete commentary on *SS*, known as *Nibandha-samgraha*.

He hailed from the village Ankolā near Mathurā, and was the son of the physician BHARATA-PĀLA, he was patronized by a feudatory of the King of Mathurā, SAHAPĀLA, who governed the area called Bhādānaka.

His date is uncertain, but he probably belongs to the 10th century A D. He does not quote Chkp's commentary on *SS* (*Bhānumatī*), but Chkp criticizes the views of Dalhana. He must, therefore, be earlier than Chkp (A D 1060).

His commentary is lucid and elaborate, especially meant to help the students. He quotes from earlier commentaries on *SS*, viz., by BHOJA, JAIJATA GAYADĀSA, BHĀSKARA, (Pañjikā) and BRAHMADEVA (*Tippaṇa*), from whom he has derived much help. This commentary has a gloss by ARUNADATTA, known as *Sarvāṅga-Sundarī* [See *SUŚRUTA-SAMHITĀ*].

Dhanvantari. Regarded as the original exponent of Indian medicine, Dhanvantari has many myths and legends woven around him. He emerged with the pot of ambrosia (symbolic of medicine) in his hand.

from the ocean when it was churned by the contesting gods and demons. He is viewed as the very incarnation of Vishnu (cf., *Mahābhārata*, *Ādi*, 1140, *Rāmāyana*, I, 45, 32, *Bhāgavata*, 8, 8, 34, *Harivamsa*, 29, 1523, *Vishnu-purāṇa*, 4,8,4). He is said to have recovered ambrosia which had been lost, and thus obtained a share in sacrifices (yajñabhuj).

Legends make him reappear as Divodāsa, the prince of Banaras (Kāśīrājā), in the family of Āyus. According to SS, Dhanvantari, Divodāsa and Kāśīrāja are names of the same person who is "the first god and who freed the other gods from old age, disease and death" (Dhanvantarī ādidevo jarā-rujā-mrtyu-haro'marānām), and who in his Hīmalayan retreat taught surgery to Suśruta and other sages. BP explains that Dhanvantari appeared on earth in Banaras in the princely family of Bāhuja and became known as Divodāsa, that he wandered about as a mendicant even during his early years, and that Brahmā persuaded him to accept the crown of Banaras (Kāśīrāja). However, there are accounts which make Dhanvantari the son of Kāśīrāja, and Kāśīrāja the grandson of Dhanvantari. There may thus be more than one Dhanvantari, the earliest of whom was called Āyus (who was the son of Purūravas). The lineage preserved in *Vishnu-purāṇa* (4,8) is Purūravas-Āyus-Kshatravrdha-Kāśa-Kāśīrāja (name, not 'king of Kāśī') — Dīrghatamas (Dīrgatapas in *Harivamsa*) — Dhanvantari-Ketumāna-Divodāsa.

Dhanvantari is not mentioned in RV, but Divodāsa figures prominently (e.g., 1,116,18, 6,16,5, 6,31,4). And Divodāsa is here intimately associated with the sage Bhāradvāja, who in turn is associated with the Asvins, Agni, and Indra. Sāṅkhāyana-grhya-sūtra (2,14) connects Dhanvantari with Bhāradvāja. In the traditional account of the origin of Indian medicine, Dhanvantari learnt medicine from Bhāradvāja, who

in turn was taught by Indra, and he by the Aśvins (although BP would make Dhanvantari the direct disciple of Indra (adhītya chāyusho vēdam Indrād Dhanvantarī purā), Ātreya and Bhāradvāja, according to this work, were Indra's disciples on different occasions, and Ātreya taught Bhāradvāja. Chakrapāṇi would identify Ātreya with Bhāradvāja [See ĀTREYA].

A work of recent origin but enshrining an old legend, also makes Bhāradvāja teach Dhanvantari who had been born as an 'ambashta' (born of a Brahmin father, the sage Gālava, and a vaiśya girl Vīrabhadra), and as the progenitor of the Vaidya caste (*Ambashtāchāra-chandrikā*).

Dhanvantari appears to have been an actual historical person, although his precise identity is hard to be ascertained. He taught surgery (Śalyāṅga), one of the eight divisions of Ayurveda, at the instance of Suśruta, to a group of sages among whom Suśruta was the foremost. Dalhana enumerates 12 of his disciples: Aupadhenava, Vaitarana, Aurabhra, Paushkalāvata, Karavīrya, Gopura-rākshita, Suśruta, Bhoja, Nimi, Kankāyana, Gaṛgya, and Gālava (NS I, 1). The names of Nimi, Kankāyana, Gaṛgya and Suśruta and their formulae are mentioned in the *Bower Mss* (*Nāvanītaka*), where Susruta appears as the student of 'ascetic (*muni*) Kāśīrāja'. Of the names of masters mentioned here, Gaṛgya figures also as a student of Ātreya (CS, 11).

The disciples of Dhanvantari are said to have compiled their own medical treatises. While Suśruta's is only the one that has come down (*See* SUSRUTA-SAMHITĀ), we have references to the treatises of others, some of them have also been quoted, as, e.g. PAUSHKALĀVATA's views in *Āyurveda-dīpikā*, (Chkp on CS), *Bhānumatī* (Chkp on SS), *Tattva-Chandrikā*, Karavīrya's prescriptions in NS and VyMk, Gopurakshita in NS, and *Tattva-Chandrikā*, Vaitarana's formulae in the same works as also in Chakra-

datta (where Vaitarana-Vasti, an enema, is referred to)

Although Dhanvantari is credited with the division of Ayurveda into eight branches (angas) (cf., *Vishnu-purāṇa*, 4,8,4), he as well as his disciples are associated mainly with surgery. That is why the tradition of surgery in India is known as 'Dhānvantara-saṃpradāya' to distinguish it from the tradition of therapeutics known as 'Ātreya-saṃpradāya'. Even Charaka refers to surgeons as 'dhānvantariyāḥ' (*CS, Chik Sth* 5, 'tatra dhānvantariyānām adhikārah kriyā-vidhau')

But Dhanvantari is regarded as the patron-god of all branches of medicine. Indeed, according to *Garuda-purāṇa*, (142, 5-6) he taught Suśruta all the eight branches of Āyurveda (āyurvedam athāsthāṅgam Suśrutāya cha uktavān), although Suśruta's name is especially associated with one of them (śalya, surgery)

Dhanvantari is not credited with any medical treatise of his own, in the early accounts *Brahma-vaivarta-purāṇa*, where Dhanvantari, Divodāsa, and Kāśirāja are regarded as different persons, ascribes *Chikitsā-tattva-vijñāna* to Dhanvantari, the work, however, has not come down to us. There is a voluminous glossary and *materia medica* in nine sections known as *Dhanvantari-nighantu*, but it is a compilation which is probably contemporaneous with the famous *Amara-kosha* (c. A.D. 100). There are a few other works (like *Roga-nidāna*, *Chikitsā-sāra-saṃgraha*, and *Vaidyaka-bhāskarodaya*) which are ascribed to Dhanvantari, but the ascription is obviously spurious.

There are numerous preparations which are ascribed to him, and many of them are quite ancient. Dhānvantara-ghṛta, Pāsupata-rasa, Mrtyuñjaya-lauha, Rasa-rājendra, Rasābhra-guggulu, Aśvagandhādī-taila, and Dhānvantara-gutikā (a guggulu pill with 32 ingredients)

Dhanvantari-Nighantu Also known as *Dravyāvalī*, it is ascribed to Dhanvantari, who is obviously not the celebrated Divodāsa who was the teacher of Suśruta. The composition of this work is earlier than 1150 (when the poet Mankha knew it), and even prior to the compilation of the lexicon *Amara-Kosha* (1st cent. A.D.). It is the most ancient of the medical glossaries that are available.

The original work is said to have been in three recensions, the present version which may have been based on one of them, is in six sections (vargas) and deals with 373 medicinal substances (dravyas), their names, synonyms, and brief description of properties being given.

The work which claims to be "like the third eye" (trīyam apī lochanam) for the practising physician, is extensively relied upon, despite several more comprehensive glossaries that have been compiled subsequently [See NIGHANTU]

Dravya-dīpikā A gloss over Trimallabhatta's *Dravya-gūṇa-śataka* prepared by KRISHNA-DATTA-MISRA, son of ŚIVA-DATTA-MISRA of the Karpūriya clan (author of *Nānārthaushadhi-kōsha*) [See SIVA-KOSHA]. The author has sought to bridge the gap between the classical pharmacological theories and their practical utility. He advances a fresh outlook on substances, qualities, taste, etc.

Dravya-gūṇa-saṃgraha This is an early *materia medica*, compiled by CHAKRAPĀNI-DATTA (around A.D. 1060), mainly following *CS* and *SS*. The major part of it deals with articles of diet for the patient, but no medicinal substances have been described therein.

The topics that are dealt with here are foodgrains, meat, vegetables, salts, fruits, water, milk, oils, sugar-cane products

(ikshu-vikrti), wines and liquor, cooked rice (krtāṇṇa), prescriptions concerning food (āhāra-vidhi), and articles of food that have to be taken after medicament (anupāna) Substances that are of food value (āhāra-dravya) are primarily nourishment-oriented (rasa-pradhāna), while articles of medicinal value (aushadha-dravya) are predominantly potency-oriented (vīrya-pradhāna) [See NIGHANTU]

Dravya-guṇa-samgraha A pharmacological work prepared by *Chkp* (11th century) giving mainly details about the health value of the articles of food The author claims that he has consulted numerous treatises and drawn their essential points (*tantrānām sāram ākrshya*) (Bombay 1925, with comm by Jvālā-prasād Mīśra)

The work begins with an account of the taste, property, potency, etc., of the drugs, which have been dealt with in 15 sections cereals, meat, vegetables, salts, etc., fruits, drinks, milk, oils, sugar-cane, etc., fermented drinks, preparations of food, eatables, principles to be followed while eating, anupāna, and miscellaneous

Dravya-guṇa-śataka A manual in 102 verses, dealing with pharmacology, it is compiled by TRIMALLA-BHATTA, author of *Yoga-taranginī*, and a Telugu Brahmin who resided at Vārāṇasī. One of the MSS is dated A D 1665 (samvat 1725) The work became popular all over the country (Khemraj Śrī Krishnadas, Bombay 1896)

The work, which follows *Bhāva-prakāśa* and *Madana-vinoda*, is in 15 sections The opening verse (2) deals with the effect of the six tastes on the *doṣhas* Following this are treated water, milk and its products, cereals, meat, vegetables, sugarcane and honey, oils, fruits, spices, prepared food, fermented liquors (sandhāna), alcoholic drinks (madya), massage and bath, betel-chewing, and metals Among metals, zinc

(yaśada) and lead (nāga) are not referred to

Dravya-guṇa-śata-śloki This is a medical glossary (also known as *Pathyāpathya-nighantu*), prepared by TRIMALLA-BHATTA (between A D 1383 and 1479) Its 100 verses arranged in 14 sections (vargas) deal with different varieties of water, milk, grains, meat, plant-products (leaves, flowers, roots and fruits), sugar-cane, oils, honey, grapes, ginger, etc., boiled rice, wines and liquor, cosmetics and betel-leaves The emphasis is on dietetics [See NIGHANTU]

Dravyāvalī A pharmacological lexicon that has got mixed up in course of time with *Dhanvantari-nighantu* The introductory verses of the latter work claim *Dravyāvalī* to be the title of the entire work There is also a mention in it that *Dravyāvalī* ascertained for the benefit of scholarly physicians the names of 373 drugs (7,4) "Without acquaintance with such a work, the physician would become a laughing stock

. Should he have this work, it is like having a third eye" (15)

Dhanvantari-nighantu assumed its present form over at least two or three centuries Actually, it consists of two distinct works, one of which is *Dravyāvalī*, a list of drugs, described through synonyms Later, there was another work which gave also the qualities and actions of each of these drugs, but the name of this work has not survived The composite work, which became celebrated as *Dhanvantari-nighantu* (bearing however no relationship to *Dhanvantari*), got its present form during 10th to 13th centuries of the Christian era [See DHANVANTARI-NIGHANTU]

In some of the MSS obtained from Mahārāshtra, the authorship of *Dravyāvalī* has been ascribed to MAHENDRA-BHOGIKA, son of KRSHNA-BHOGIKA, a resident of Sthāneśvara

Drdhabala Drdhabala is a redactor of CS, who also supplied the missing portions. It is not known if Charaka had redacted the entire *Agniveśa-Tantra*, if he had, it must not have survived in its entirety by the time the work was begun by Drdhabala, who claims that the last 41 chapters were contributed by himself 17 chapters of *Chikitsā-sthāna* and the entire divisions of *Kalpa-sthāna* and *Siddhi-shtāna*, consisting of 24 chapters (CS, *Chī Sthāna* 30, 289 and 290) NS edition. And the colophons from *Chī Sthāna* 9 in CS till the end have the words, 'Thus ends the chapter in the *tantra* of Agniveśa as redacted by Charaka and the missing portions being supplied by Drdhabala' (iti Agniveśa-krte tantre Charaka-pratisamskrte aprāpte Drdhabala-pūrite)

It is difficult to ascertain which 17 of the 30 chapters in *Chikitsā-sthāna* are his contributions. It is probable that the last 17 chapters of this division together with the subsequent two divisions had been lost. This amounts to about one-third of the whole work. Drdhabala probably recast the entire text, and his redaction came to be known as 'Kashmir recension' (*kāsmīra-pāṭha*)

Drdhabala was the son of Kapila-bala, himself a physician, and an inhabitant of Pañchanada-pura ("the town which has five rivers"). This town has been identified as Pañjor or Pañchapanor ('pañchanīra', 'five canals') in Kāshmir near the confluence of Zhelum (Vitastā) and Indus (Sindhū), a few miles north of Śrīnagar.

His date is uncertain, but he has been assigned to the latter part of the third or the early part of the fourth century.

E

Egyptian Medicine Egyptian medicine, which has many close correspondences with Indian medicine, developed in the period commencing about 3500 B C and continued to play an important role till 332 B C when the Macedonian adventurer, Alexander, overran the country and conquered it. Our knowledge of this system of medicine is principally derived from several ancient medical papyri (paper MSS), now named after their discoverers (like *The Ebers Papyrus*, *The Edwin-Smith p*, *The Hearst p*, and *The Chester-Beatty p*) or the places in which their study was undertaken (like *The London p*, and *The Berlin p*), and also from the Greek and Roman references to the Egyptian medical practices.

Patronized by the ruling Pharaohs and cultivated by the powerful priests, medicine developed within the framework of royalty and religion. The combination of prescriptive medicine with exorcism, magical spells and incantations was a conspicuous feature. But the concern for prolongation of life, especially in the royal household and among the nobility, and the elimination of incapacitating ailments among the soldiers and the working classes were chief motivations for the discovery and preparation of numerous drugs (about 700) from vegetable, animal and mineral sources.

The standard practices of embalming and mummification led to a fairly comprehensive knowledge of human anatomy and physiology. The interior of the human cadaver was thoroughly explored, and various secretions within the body were precisely identified. There was need to clear the body cavities of their contents, to remove the dia-

phragm, abdominal viscera and other parts of the body which were liable to interfere with the preservation of the form of the dead person, to extricate and remove the brain dexterously from the bony box, to leave intact and in their places the heart, the eyes and the tongue, as religious rituals required during these practices. This is a great spur to the empirical understanding of the structure and functions of the human body. ATHOTIS a prince of the first-dynasty (about 3400 B C), is credited with a book on anatomy.

The priests who specialized in magic and theurgy also developed therapeutics and surgery, temples (especially in Memphis, Thebes and Sais) housed medical schools. Diseases were normally fought by a team of priests, physicians and magicians. However, in due course, medical practitioners freed themselves from the hold of religious ideas to a considerable extent, and set out to specialize in ophthalmology, dentistry, gynaecology, general medicine and surgery (as was noticed by the Greek traveller Herodotus). Clinical examination also became sophisticated and standardized. Physicians were organized in guilds.

There is one *papyrus* ('*The Edwin-Smith p*'), the contents of which are almost exclusively matters of surgery in connection with wounds, tumours, abscesses, hernia, jaw-dislocations, bone-fractures and so on. Elaborate bandages with splints, linen and oil, and ointments have been described. Many elementary surgical procedures have been mentioned, as also the diagnostic and prognostic considerations that are involved in surgical operations.

Egyptian medicine recognized the need to understand the nature of the internal fluids, secretions and waste-products before the cure for a disease is effected. The fluids as well as air are circulated in the body through a network of arteries (called *metu*) which can become hard, get constricted, or lose efficiency — thus causing disease. While cir-

culating the fluids and air throughout the body, the disturbed arteries communicate disease also to the associated organs. The drug that is administered by the physician travels through the same arteries and reaches the relevant organs, effecting remedial changes in them.

Among the vegetable drugs employed by the Egyptians are included onion, garlic, castor oil, mustard, linseed, saffron and aloes. The medicinal uses of resins, opium, metallic salts, iron, nitrate of potash, mercury, honey, and lime were known to the Egyptian physicians. Precious stones were powdered and administered as drugs. *The Ebers papyrus* (c 1600 B C) deals with the preparations of medicines.

Heart was regarded as the main organ, as the physician was required to understand "The movements of the heart" in different parts of the body by feeling them with his fingers. It would appear that pulse-examination was a standard procedure in diagnosis, as it was in Chinese medicine. Although it is not certain that Egyptians, were aware of the phenomenon of blood-circulation or its relation to heart, they held that heart was the organ (in collaboration with the stomach) where blood was prepared from the food that is eaten.

Egyptian medicine was highly appreciated in Greece, and it had an enormous impact, albeit indirect, on the development of European medicine. The Greek *materia medica* and the doctrine of humours can both be traced to Egyptian sources. In fact, the historians of medicine like Ebell have viewed Greek medicine as a continuation and development of Egyptian medicine.

G

Gada-Nigraha This is a comprehensive treatise on all branches of medicine by SODHALA, who belonged to Gujarat, and was probably a contemporary of VAN-GASENA (C A D 1119) The author is described as a physician of Vatsa-gotra, son of Vaidya-nandana (which perhaps was not his actual name), a Gurjara Brāhmin of Roykabal sect, and a student of SAMGHA-DAYĀLU

The work is in ten sections (khanda), the first of which (called 'Prayoga-khanda') incorporates numerous (more than 585) well tried remedies (powders, pills, pastes, medicated ghees, oils, etc) The next eight sections deal with the eight classical branches of Āyurveda, the last section pertains to the five treatment – procedures (pañcha-karma)

The author appears to have had an acquaintance with *MN* and *Vrnda*, but not with *Chakradattam* (the celebrity of which probably had not by then spread to the western regions) (ed by Y T Āchārya, Bombay, 1911 and 1915)

Gayadāsa He is the author of an incomplete commentary on *SS*, called *Nyāya-Chandrikā* familiarly, *Chandrikā* or *Bihat-pañjikā* or *Suśruta-pañjikā* (*Pañjikā*), which is quoted by DALHANA frequently His commentary on *CS* also is fragmentary He refers to *SS* as 'salya-tantra', a work on surgery

He was the court-physician of some king of the Pāla dynasty in Bengal (Gaudeśvar-āntaranga, *Ratna-prabhā*)

He is placed in the 10th century [See SUŚRUTA-SAMHITĀ]

Greek theory of humours The concept of doshas in Indian medicine is often likened to the Greek theory of 'humours' While there are ideas that are common or very similar, there are also differences which are fundamental An understanding of the Greek theory would clear misunderstandings

Although the theory is usually associated with Hippocrates of Cos (460 – 377 B C), it dates back to the philosophical speculations of Anaximander (c 611 B C) and the medical suppositions of Empedocles of Arringtonum (504-433 B C), and the latter belonged to one of the three pre-Hippocratic medical schools in Greece, namely, the Sicilian school of Croton, founded by the celebrated Pythagoras in 532 B C He held that all things in the world including the human body were basically composed of only four elements, earth, air, fire and water, each with its own specific quality dry, cold, warm and moist respectively

The concept of qualities had been suggested a little earlier by another early medical authority Alcmaeon (about 500 B C), belonging to the same school He viewed health as the physiological balance between two pairs of opposite qualities dry-moist and cold-warm When any one of the qualities occurs in excess, the balance is disturbed, and this is disease The physician must, in that case, introduce into the system the opposite quality, so that the quality in excess is counter-balanced

Empedocles improved upon this notion, and taught that the body was constituted of the four elements in varying proportions, and that alterations in the associated qualities were incidental to life Opposition of qualities determined the state of health or its disturbance Hippocrates worked on these two basic ideas, (the four elements and the phenomenon of opposition), and

propounded his theory of humours

The four elements with their respective qualities (viz earth-dry, air-cold, fire-warm, water-moist) are responsible for the four humours in the body, blood, yellow-bile, black bile and phlegm. The humours were characterized by combinations of qualities: blood (warm and moist), yellow-bile (warm and dry), black-bile (cold and dry), phlegm (cold and moist).

The four humours occur in individuals in different proportions. This variation is responsible for all the individual differences with regard to physical and mental abilities, dispositions and susceptibility to disease. When the proportion of the humours in their admixture is proper, the condition is known as *eucrasia*, which is reflected in health. When there is an imbalance in the quality of humours in the body, the condition is *dyscrasia*, symptomatic of ailment or disease, a state of stress.

The theory further shows that the condition of *dyscrasia* or stress would automatically be productive of a curative process, to correct the imbalance or restore the equilibrium is a natural urge. There is a constitutional provision and facility for this: the heat of the body. It drains off the excess of the humour that has brought about *dyscrasia*. The draining off was called 'crisis', and it was supposed to take several forms such as sweating, purging, blood-letting (haemorrhage). The concept of heat within the body was again a contribution of Empedocles. It is this heat that restores the state of balance (*eucrasia*).

The dynamics of the four humours is related to natural variations that are seasonal, climatic or elemental. The natural tendency of one of the humours to dominate over the others in a season, and the characteristic ailments that would be manifested thereby are noted. Blood in spring, yellow-bile in summer, black-bile in autumn, and phlegm in winter are on the ascendant.

The theory of humour lost its ground in Greek medicine in course of time. Eristatus of Chios (c. 290 B.C.), whose anatomical knowledge and studies on brain gave a new dimension to ancient medicine, opposed the doctrine of four elements as well as the theory of humours. He looked upon the body as constituted of concrete atoms. Humour, in its original meaning, was a 'fluid' comparable to the Indian idea of *rasa*, and did not have an anatomical location. Asclepiades of Bythria (c. 125 B.C.) also rejected the relevance of the theory of humours to diagnosis or treatment.

The Hippocratic theory was revived by Galen (A.D. 130-200), who incorporated the notion of four humours in his concept of pathology. However, he propounded the idea of a 'spirit' (*pneuma*) to explain the favourable and unfavourable dynamics of the humours. Theophilus of Protospatharius (A.D. 610-641) was greatly influenced by the views of Galen, and the theory of humours was again popular in the medical world.

When Greek medicine moved, during the Middle Ages, to Constantinople and then to Syria and finally to Arabia, the theory of humours was widely accepted. The medical school at Jundi-Shapur (founded c. A.D. 480) which became celebrated in the Abbasid world during the eighth century, was mostly Greek in its orientation, and regarded Galen as almost an oracle. The physicians who studied here and spread the medical wisdom and practice all over the Middle East accepted the four qualities (cold, warm, dry, moist), the four elements (earth, water, fire, air), and the four humours (blood, yellow-bile, black bile and phlegm).

The old Greek notion that health was a matter of balance between the humours continued to inspire the Arab physicians. But the humours in normalcy also would

not be perfectly balanced qualities and quantities would depend upon several factors such as the age of the individual and season of the year. The bodily organs also had an impact upon the dynamics of humours. Ordinarily, however, they mix evenly, and that is what we call health. Excess of a quality or a humour may vitiate this even mixture, that quality needs to be suppressed, or that humour isolated, in order that normal mixture may be restored. This is what the physician's drugs and treatments seek to achieve.

Of the humours, the two biles are to an extent stored in the bodily organs, the yellow-bile in gall-bladder and black-bile in spleen. The stored portion of the humours do not enter into the admixture of the humours. A humour may become vitiated by combination with another humour in excess, or by a quality that is not natural to it. This is symptomatic of disease.

H

Hārīta Hārīta was an ancient physician one of the six disciples of ĀTREYA. A *Samhitā* in his name is available (printed, Calcutta 1887). But it does not seem to be an old work. The work is said to have been composed by Hārīta, but the spokesman is Ātreya, hence called ĀTREYA-SAMHITĀ also [See ĀTREYA-SAMHITĀ].

There are citations in medical works from Hārīta, since lost, and his views are frequently mentioned as authoritative. Thirst, according to him, is the strongest and most irresistible of the urges (*trṣṇā gariyāsī ghorā sadyah prānavināśinī*). One should

not sleep immediately after taking food, even a healthy man would fall ill if he does so ('bhuktvā svapnam na seveta, svastho'py-asukhito bhavet').

Many formulae, especially of medicated ghees, are ascribed to him (Hārītokta). Katuka-ghṛta, Mahā-vasādyā-ghṛta in haemorrhage (*rakta-pitta*); Laṣuna-ghṛta in jaundice (*kāmalā*) and inflammation (*śoṣha*), and Mahānīla-ghṛta in several ailments, e.g., leucoderma (*śvitra*), erysipelas (*sarpī*), abscess (*vidradhi*), ulcer (*vraṇa*), insanity (*unmāda*) and memory disorders (*apasmṛti*). The last mentioned appears to have been popular (*atiprasiddha*) during the days of TĪSATA.

The printed edition consists of seven divisions (*sthānas*) and 88 chapters in all. The last division is an appendix (*pariśiṣṭa*), dealing with earlier medical literature. The first division (12 chapters) or (*prathama* or *Annapānaka-Sthāna*) is introductory. It treats of food and drink, health, hygiene, physicians, medical education, tastes and seasonal variations.

The second (7 chapters) or (*Dvītiya* or *Arishta-Sthāna*) deals with prognostic details of diseases (like dreams, distorted sensations and messengers).

The third (57 chapters) or (*Chikitsā-Sthāna*) prescribes treatments for various diseases like dysentery (*atisāra*), abdominal tumours (*gulma*), indigestion (*mandāgni*), loss of appetite (*arochaka*), colic pain (*śūla*), anaemia (*pāṇḍu*), epilepsy (*apas-māra*), piles (*arśa*), haemorrhage (*raktapitta*), dropsy (*jalodara*), leprosy (*kushta*) and insanity (*unmāda*). There are also accounts of toxicology (*vishatantra*), paediatrics (*bāla-roga*), treatment of burns (*agnidagdha*), troubles in pregnancy and puerperal diseases and bone-setting (*bhagana*). There is a chapter on virilification (*vājīkaraṇa*) also.

The fourth division (4 chapters) (*Kalpa-Sthāna*) deals with drugs (like *harītakī*,

triphalā and rosona) and medicinal preparations. The fifth (6 chapters) (Sūtra-Sthāna) deals with dosage of medicines, weights and measures, medicated oils, treatment methods like rectal injections, clysters, enema and venesection.

The last division (1 chapter only) (Śārīra-Sthāna) deals with anatomical details of the human body, especially in the foetal stage.

Hemādri He is the author of *Āyurveda-Rasāyana*, an incomplete commentary on *AHr*. Son of KĀMADEVA, he was minister (śrī-karanādhīpa) to the Yādava king of Devagiri, MAHĀDEVA (1260-71), and his son RĀMACHANDRA-DEVA (1271-1309). His fame rests on the encyclopaedic work, *Chaturvarga-chintāmani*.

The commentary on *AHr* was composed sometime between 1271 and 1309, for he refers in the prefatory verse to King Rāmachandra deva (Rāmasya rājñah śrīkarāneshvadhī, v 6). He describes himself as a physician (agadañkāreṇa Hemādrinā).

He encouraged many men of letters, among whom was the celebrated VOPADEVĀ [See *ĀYURVEDA-RASĀYANA*].

Hikmat-Prakāśa A treatise on Yūnāni (pārasī-pratibimba) system of medicine in metrical Sanskrit by MAHĀDEVA, son of BĀLAKRSHNA. It is in three parts. The first part deals with physiological constituents, potency, urine examination, etc.; the second part enumerates the drugs with their properties and use, and the third part contains medicinal preparations. The author has himself described this work as 'a curious one' (vichitram). The work was completed in A D 1773 (Khemraj Srikrishnadas, Bombay, 1913).

Hiranyāksha An ancient physician (also called Kusika) whose views on the common origin and disease and on the tastes are quoted by Charaka (CS, Sū sth, chap 25,

yajjah-purushīyam 14 and 15 and chap 26, Ātreya-Bhadrakāpyīyam), and who is also cited in *VyMk* (in the section on the diseases of children).

He figures among the sages who had assembled to discuss with the venerable Ātreya-Punarvasu about the sources of the human constitution (yaj-jah-purushah), which is a configuration (rāśih) of the soul, sense-organs, sense-objects and mind. The problem was a prelude to determine the origin of diseases. He speaks immediately after VĀRYOVĪDA, who propounds that the tastes (rasas) are responsible for the living being as well as the diseases. This view is rejected by HIRANYĀKSHA.

He was an adherent of the ancient Sāmkhya school (esha sāmkyair ādyaih parikshitah), which held that the human constitution is derived from six primary elements (shad-dhātujah purushah, five material elements and consciousness, khādayas chetanā shashtha dhātavah purushah, q Chkp). He concludes that diseases also emerge from the same source, viz, the six elements (rogah shad-dhātujas tathā).

As regards the number of *rasas*, he held that they were four (chatvāro rasāh) sweet and favourable (svādur hitah), sweet but not favourable (svādur ahitah), not sweet but favourable (asvādur hitah), neither sweet nor favourable (asvādur ahitah). Sweet is explained by *Chkp* as 'desirable' (*abhiṣtam*) and favourable as 'unharmful' (*āyatāvana-pakārt*) (CS, Sū sth, 26).

This discussion takes place in another conference of sages Bhadrakāpya, Śakunta, Maudgalya, Hiranyāksha (Kusika) and others with Ātreya in the delightful garden, Chaitra-ratha. All the sages who participated in this discussion are described as learned and aged (śruta-vayo-vrddhā) and great sages known for their self-restraint (jitātmāno maharshyah) (CS, I, 1, 3-6).

Hrdaya-dīpikā• A glossary of drugs giving only synonyms prepared by VOPADEVĀ, son of the physician KEŚAVA (author of *Siddha-mantra*) and pupil of DHANEŚVARA. It is little more than a list of synonyms, and follows the style of PARYĀYA-RATNA-MĀLĀ. The work is in 8 sections, and the last section ('miscellaneous', *miśrakavarga*) includes details other than drugs (like diet and five-fold treatment). The drugs mentioned here are taken directly from *AHr*, hence the title of the work.

The author was a court-physician to Mahādeva, the Yādava ruler of Devagiri (A D 1260-71), and was patronized by the celebrated Hemādri, the King's minister and adviser, who also wrote a commentary on *AHr* (*Āyurveda-rasāyana*). Vopadeva has written several other works including a gloss on his father's *Siddha-mantra* (*Prakāśa*) and a commentary on *Śārṅgadharasamhitā* (*Gūdhārtha-dīpikā*).

I

Indra A celebrated and colourful hero in *RV*, Indra learnt medicine from the Aśvins and taught the sages Bhāradvāja and Dhanvantarī, who crystallized the Indian therapeutics and surgery. He is son of Kaśyapa and is always pictured as a youth (*kumāraka*), he is also regarded as the youngest of gods (*kanīna*, 'the little one'). He is extolled as the offspring of the Sky and Earth, and numerous hymns of *RV* record his heroic deeds, the most illustrious of which was the slaying of the dragon, Vṛtra. He is associated with the invigorating

drink, soma, which has been praised in as many as 120 hymns in *RV*, including an entire 'mandala' (the 9th). He is said to have derived his strength, courage and goodwill from this drink (*RV*, 1,61,7, 3,36,3, 4,10,5 etc), which was recovered for him by his associate Vishnu (*RV*, 3,48,4). The excellent qualities of this 'herbal preparation' have been listed in the *RV*: it tones up the body, eliminates the ailments, nourishes the limbs, cheers up and exhilarates, it is an antidote to depression and melancholy, and is said to stir up good and pleasant thoughts.

His knowledge of medicine is extolled in *RV* (2,23,7), and his association with the Aśvins, the divine physicians, is celebrated in *sautrāmanī*-ritual. He is claimed to have restored eyesight to Parāvraja and to have helped Śrona to recover the ability to walk (2,15,7). He is recorded to have cured Apālā of her skin-disease (8,91,7). His skill as a surgeon has also been mentioned (8,1,12, *AV* 14,2,47), as also his knowledge of snakes and scorpions (10,4,14).

AV adds that Indra was an expert in healing mental illnesses (6,111,4) and that he gave many recipes (5,25,4-6). He was also responsible for many a germicide (3,37,8, 5,23,1). Foetus was 'protected' by him (5,25, 4-6). His name is mentioned in connection with the disease āsrāva (2,3,6). *Vājasaneyi-samhitā* (35,46) addresses a prayer to Indra for health and medicines.

A tonic to prolong life (*rasāyana*) is ascribed to him. Known as *Aindri-rasāyana*, it is said to have been taught by him to Bhṛgu, Atri and other sages. *Hārītākī-lehya* is also associated with his name.

Indu Indu or Indu-kara is the author of *Śaśilekhā*, the only commentary on *Ashtāṅga-Samgraha* that is extant. It is probably a South Indian work.

His date is uncertain. But as HEMĀDRĪ quotes him, he is earlier than A D 1260 [See *ŚAŚILEKHĀ*].

Indu-Nighanṭu Cited as an authority by *Kṣhira-svāmin* (11th century commentary on *Amara-kosha*) and the author of *Siva-kosha*, this must have been a pharmacological glossary of considerable popularity. The author of this work, Indu, does not appear to be the same as the commentator on *AHr*. The work, however, is no longer extant.

J

Jaijjata Jaijjata, also known as Jejjata, Jaiyyata is the author of the earliest commentary on *SS* (around 5th century), quoted by Dalhana.

He is said to have been a student of VĀGBHATA. The name suggests that he was from Kāśhmīr [See *SUŚRUTA-SAMHITĀ*].

Jalpa-kalpa-taru This is a philosophical gloss on *CS*, by GANGĀDHARA-KAVIRĀJ (VS 1856-1942), a renowned Ayurvedic physician of modern times who was also the leader of renaissance in Indian medicine.

Jīvaka A renowned physician during the days of the Buddha, Jīvaka was a specialist in paediatrics (*kaumāra-bhṛtya*), one of the eight aspects of Indian medicine.

According to the Buddhist text, *Mahāvagga*, the Tibetan accounts preserved in *Kah-gyur*, and the account in *Buddha-gosha's* Pāli commentary *Sumangala-vilāsinī* on the canonical *Dīgha-Nikāya*, he was a physician to the Buddha himself and the king Bimbisāra. Son of Sālavatī, a cour-

tezan of Vesālī, and the prince Abhaya, grandson of Bimbisāra, he was inspired to become a physician when, as a youngster, he saw a physician who received his fees only when the patient was cured and not otherwise. He learnt some medicine in his home-town, but went to Takṣaśīlā to specialize in surgery (including "the art of skull-opening") and learnt for seven years under the renowned master there, Ātreya by name (not the Ātreya who taught Agnivesā and others). He held the view that one should not learn medicine at all if one was not interested in learning it thoroughly.

Many remarkable cures are ascribed to him, and his treatment as contained in the legends included a quick cure for jaundice, laparotomy, cranial operations and easy delivery. His fame, however, rests as a child specialist.

Bower Mss contains a formula of his for diseases of children (2, p 176) "Clerodendron siphonanthus (*bhargi*), long pepper (*pippali*), *Stephania hermandi folia* (*patha*), gynoandropsis *pentaphylla* (*payasa*), with honey (*madhunā saha*), this linctus (*lihet*) would cure emesis (*chardi*) that is due to the deranged śleshma."

Chakradattam contains another recipe (*Saureśvara-ghṛita*) who is said to cure elephantiasis (*ślīpada*), sprue (*grahani*) and oedema (*śvayathu*). It is also said to be a cardiac tonic (*hrdya*) and anthelmintic (*koshtha-kṛimī-vināśanam*). Yet another recipe is said to be especially good for children (*kumārānām sukhāvaham*), a powder of (*drākshā*), *fagonia arabica* (*durālabha*).

K

Kalyāṇa-kāraka: This is a comprehensive medical treatise in lucid Sanskrit verse, written by the Jaina ascetic UGRĀDITYA (about A D 850) on mount Rāma-giri in Āndhra Pradesh. It deals with all the branches of medicine in two parts and 25 chapters (Ed by Vardhmāna Pārśvanātha Śāstri, Sakhārām Nemichandra Series No 129, Sholāpur, 1940).

The author claims to have consulted numerous earlier medical texts by Jaina authors, such as on 'minor surgery' by PŪJYA-PĀDA, on surgery (śalya-tantra) by PĀTRA-SVĀMIN, on toxicology and pacification of the evil dispositions of planets (vishogragraha-śamana-vidhi) by SIDDHA-SENA, on paediatrics (chikitsā śīśūnām) by DAŚARATHA and MEGHANĀDA, and on rejuvenation (vaidyam vrshyam) by SIMHA-NĀDA (20, 85). These, however, are no longer available, or they may be in manuscripts unnoticed.

The work assumes a typical Jaina outlook in rejecting the use of animal food and alcohol while treating diseases, and assumes a position against even Charaka in this regard. Diseases (āmaya) and meat (māmsa) are both alike caused by sin (pāpajātāt), by the three doshas, and by the involvement of bodily constituents (mala-dhātunibandhanāt), and, therefore, meat cannot be employed to cure a disease (na pratikārakam). It is wrong to argue that plants and meat are not different, on the ground that both are living beings. Meat is living substance (jīva-śarīra), but all living substances are not meat: neem is a tree, but not all trees are neem! The work recommends only the medicines derived from the vegetable kingdom, and that too in little quantity

(*svalpam*) and taken in an agreeable manner (*sukham pathyatamam*).

The enumeration and description of diseases here follow a line that is rather unique, and quite different from the scheme usually followed (as eg in *MN*). The major diseases are classified neatly in three categories according to disturbances of the three *doshas*. Most of the ailments listed in works like *MN* are here classed as minor (kshudraro-ga). The work gives an account of the methods of rejuvenation also. Mercury has been mentioned but barely and briefly. *Treatment procedures like cautery, enema-ta and surgery* have also been indicated.

The involvement of occult methods and astrology in medicine can already be seen in this work, but only as diagnostic aids. Inquiry (praśna), oracular utterances (āgama), omens (śakuna), supernatural indications (nimitta), dreams (svapna), prophesies (divya-kathita) and consideration of stellar positions (lagna) are said to help the physician to understand the life-span (viz, curability or otherwise) of the patient.

It is curious that the expression 'Vaidya' (for medicine, treatment or physician) has here been derived from 'vidyā' (the perfect and omniscient vision), the physician (vaidya) is said to be one who is proficient in the science that has emerged from vidyā (I, 18).

This work was translated into Kannada by the poet JAGADDALA-SOMANĀTHA in A D 1150. But this poet appears to regard the author of the original work as Pūjyapāda [See UGRĀDITYA].

Kankāyana: This ancient physician who belonged to the Bāhlika region (Bāhlika-bhishak) has been quoted by Charaka (*CS*, Sū sth, ch 25, *yajñat-purushīya*, 22 and 23, ch 26, *Atreya-Bhadrakāpyīyam*, 8; and Śā sth, ch 6, *śarīra-vichayam*, 21).

He appears as a participant in the conference on the origin of diseases (I, 25), oppos-

ing the argument of Bhāradvāja that diseases are natural emergences during the course of evolution, (bhava-hetuh svabhāvas tu vyādhīnām), as natural as the emergence of the five material elements Kankāyana disapproves of the idea of naturalness of diseases on the ground that human effort in the case would be unwarranted and futile (na hi ārambha-phalam bhavet) He holds that it is the creator with infinite intentions (srashtā tu amita-samkalpah) that is responsible for the happiness and unhappiness in the world and for man (chetanāchetanasya asya jagatah sukha-dukhayoh)

He appears again in the discussion in the Chaitra-ratha garden on the number of tastes (*rasas*) in the presence of Ātreya (1, 26) He argues that tastes are really infinite (aparīsamkhyeyā rasā), and that they are apprehended only on the basis of innumerable factors like location, quality, action and individual differences (āśraya-guna-karma-samsvāda-visheshānām aparīsamkhyeyat-yāt, *Chkp* explains 'samsvāda' as svasamvedya, viz individual difference in apprehension)

The third place in CS where he appears is in connection with the discussion on foetal development (IV, 6) He holds that 'heart' (hrdayam) is the first organ to be developed, because it is there that consciousness is located (chetanādhiśthānatvāt)

Kāśyapa He is an early medical authority cited by CHARAKA and is probably the son of MARĪCHI According to him, the chief source of human ailments is the aberration in the Śleshma. (CS, Sū Sth , 12, 12) He is also mentioned in the *Bower Mss*, where his prescriptions for some diseases of children (like diarrhoea, vomiting, hiccough, cough, retention of discharges, morbid secretion of urine, gripes, worms, jaundice, diphtheria and skin troubles) are given (vv 1010-1040, pp 170-172) A morbid change in the child's appearance is here ascribed to an attack by a

demoness (Pūtānā), but is sought to be remedied by a pill!

He is cited in *AHr*, and discussed in *NtS* The view ascribed to him is that in the third month of foetal growth, all the sense-organs and parts of the body get formed simultaneously (yugapat)

He is sometimes identified with Jīvaka (not the famous contemporary of the Buddha, but an earlier physician, hence designated Vrddha-Jīvaka) But the work in his name makes him a teacher of a young man Jīvaka who was turned into a venerable old man to give greater credibility

A *samhitā* is available in his name (See KĀŚYAPA-SAMHITA) There are references to a tantra in his name, but it is not extant There is another work called *Kāśyapīyaro-ga-nidānam*, attributed to him, but it is a recent work Several formulae are ascribed to him (e g , Traiphala-ghrtam, Kāśyapīyagudikā)

Kāśyapa-samhitā: Written in simple Sanskrit ascribed to Kāśyapa, this work closely resembles CS in style, divisions and approach It belongs to an early strata of medical literature in India A Ms of this work was recovered from the Nepāl Durbār Library, Khatmandu and edited by Yādav Trikam Āchārya (Publ by Hemarāj Pandit, NS, Bombay) in 1938

The work is in eight divisions (names of which are similar to those of CS, except the last one, here called khila), and 200 chapters (the last division, supplementary containing 80) The work is now available in a mutilated state with many sections missing The work traces the transmission of medical knowledge, as in CS, from Brahmā through Daksha, the Aśvins and Indra From Indra, however, the account here directly proceeds to Kāśyapa and three other sages Vaśishtha, Atri and Bhrgu

Kāśyapa is said to have passed it on to a youngster, Jīvaka (son of Sage Rchika)

who wrote a medical tract based on Kāśyapa's teachings. Because of the author's youth, the sages did not take the work seriously. But when, by a miracle, the youth was transformed into a grand old man (Vṛddha-Jīvaka), his work became celebrated and popular. It came to be known as *Vṛddha-Jīvaka-tantra*.

The work was lost in course of time, but a spirit, Anāyāsa by name, had preserved it out of compassion for the suffering folk (loka-bhūta). A descendant of Jīvaka, Vātsya by name, recovered the text from the spirit, redacted and abridged it (sañchikshepa), and made it once more popular. He also added the supplementary section (Khila-Sthāna) to the "eight" divisions of the original work. (The available work has eight Sthānas, including the Khila-Sthāna, the missing Sthāna is Nidāna-Sthāna.)

The exponent here Marīchi-Kāśyapa, who is mentioned in CS (*Sū Sth* 1, 12 and *Sā Sth* 6, 21), and the pupil is Bhārgava. The work opens with "Thus says the revered Kāśyapa" (iti ha smāha bhagavān Kāśyapah). According to the work, Āyurveda as revealed by Indra to the four sages (Kāśyapa and others) is the source and support of the four Vedas (āyurvedam āśrayante vedāḥ), like the four fingers of the hand depending upon the thumb. The four Vedas teach the three-fold values of life (trivarga dharma, artha and kāma), Āyurveda deals with the source of these values, the health of the individual.

The philosophical foundation of the medical system expounded here is Sāṃkhya, and the general approach is to obtain knowledge concerning cause, symptoms and treatment (hetu-linga-aushadha-jñāna) of diseases, as in CS. The work mainly deals with midwifery, gynaecology and diseases of children. It is said here that of the eight divisions of Āyurveda, paediatrics (kaumārabhṛtya) is the best. Rickets (phakka) is dealt with in some detail, and is explained as

caused by drinking the mother's milk which is vitiated by kapha. A medicated oil, Katutailla, is prescribed for disorders of spleen.

The welfare of the newborn child is said to be secured by worshipping Śaṣṭī (the six-faced divinity of the sixth day of the lunar month, presiding over the health of infants). There is also a mention of the Buddhist Mātangī-Vidyā, and employment of the typical Jaina expressions utsarpinī and avasarpinī to denote the ascending and descending phases of the time-cycle. Many formulae included in the *Bower Mss* are from Kāśyapa.

Another work under the same title is available in the Tanjore Library (No 10780), but it does not appear to be an ancient one. It deals with several diseases like fever, dysentery, piles and nervous ailments. It is in the form of a dialogue between Pārvatī (who questions) and Parameśvara (who answers) on mount Kailāsa. The initial questions concern sins, diseases and hells. But the introductory portion mentions that some Gautama asked questions concerning medicine of the great sage Kāśyapa, who is described as "brilliant like the Sun." The work, in addition to normal medicines, prescribes also magic and religious rituals as curative methods.

Khotanese medical text: A bilingual manuscript in 70 folios (11¾×31") written in mixed Sanskrit and Khotanese discovered in Eastern Turkistan and now preserved in the India Office Library (CH 11003), this text contains medical prescriptions in metrical form (cf H W Bailey, *Codices Khotanenses*, Copenhagen, 1938, Sten Konow, *A Medical Text in Khotanese* Eng Transl, 1940).

This is principally a work on Toxicology (agada), although it also contains cures for many common ailments like fever, cough, hiccough, eye-diseases, troubled respiration and consumption. The text not only specifies drugs (e.g., aśvagandha for cough, re-

spiratory disorders, consumption etc , Kalyāṇaka for hiccough, insomnia, fever, piles, insanity etc , bālagarbha for insomnia, impurity of blood, consumption, scurvy, etc) but describes methods of preparing medicines More than 90 preparations are included here, along with names of diseases

The authorship of the work is unknown, but the narrative is addressed to some Jīvaka (probably the famous physician, contemporary of the Buddha) The invocatory verses mentions Brahma, the first exponent of the science of medicine, and the sages who were treasures of adept wisdom (siddha-vidyā-rishis) in India (Jambudvīpa) Later the name of the great Atreya is also mentioned

The use of incantations (mantras) is recommended both while preparing the drugs and when administering them, especially in cases of diseases due to poisoning (agada) and evil influences Medicines are sought to be consecrated or invigorated by the employment of sacred formulae

Kshārapāṇi. One of the early masters of medicine, he was a contemporary and fellow-student of AGNIVEŚA, who provided the basic text for *Charaka-Samhitā* A student of Ātreya, he wrote his own medical treatise, which unfortunately was lost in course of time But his views have been cited in several later works such as VyK (Śrīkantha-datta) and *Tattva-Chandrikā* (Śivadāsa-Sena) One of his views is that, although sleep during daytime is unhealthy, one who loses sleep during night for any reason will benefit by sleep during daytime for half the time lost in the night (cited in VyK)

Some formulae are ascribed to him, such as Bilvādya-ghṛta for diseases of the spleen (plīha) and Nīla-ghṛta for leucoderma (śvitra)

Kumāra-śira: Called Kumāra-śira-Bhā-

radvāja, he is quoted by Charaka as an ancient physician, contemporaneous with ĀTREYA (CS, Sū sth ch 25 20-21, ch 26-8, and Śā sth , ch 6, 21)

As one of the participants in the conference on the origin of diseases, he argued that diseases are naturally caused (bha-vahetuh svabhāvas tu vyādhīnām), even as solidity, liquid, warmth and combustion are natural emergences of the five elements (earth, water, air and fire) (1, 25, 20 and 21)

In the discussion on the number of tastes (1, 26, 8), he supports the view that tastes are five in number (pañcha-rasāḥ), and he relates them to the five elements earth, water, fire, air and ether (bhaumodakāgneya-vāyavyāntarikshāḥ)

As regards the problem of foetal development (IV, 6), he argues that head (śīrah) is the first organ to get formed, for that is the locus for all sense-organs (sarvendriyānām adhiṣṭhānam iti)

L

Lāyāyana. An ancient specialist in toxicology, he is also celebrated for his classification of insects and reptiles (kīṭa) according to their dottings (katu), markings (lekhā), wings (paksha), mouth with antennae or nipper (mukha), claws (nakha), filaments or sharp hairs (samślishta-paksha-roma), humming (svana), size (pramāna), bodily structure (samsthāna), sexual organs (linga), poisons (visha) and the poisonous effect (vīrya) He is quoted by DALHANA in his commentary on ṢS, Kalp Sth , 8

Lolūmba-rāja (or Lolamba-rāja) He is the author of a curious medical work in the form of a poem with all the usual literary embellishments, *Vaidya-jīvana*

Son of Divākara-bhatta, he was a resident of Junnār in Pune dist (Mahārāshtra) He had married a Muslim girl, and after her death, turned an ascetic He was a devotee of Durgā He had the title 'the prince of poets' (Kavi-bādshāh)

The Ms of his *Vaidya-Jīvana* dated A D 1608 has been found, and so he must have lived before 1600

Two other works from his pen, *Vaidyāvṛtaamsu* and *Chamatkāra-chintāmani* deal with medical subjects

He was also a Marāthī poet [See VAIDYA-JIVANA]

M

Madana-pāla-nighaṇṭu This is a popular medical glossary compiled by MADANA-PĀLA, the scion of the Gahadvāra family which ruled over Kanauj between A D 1098 and 1109 according to Rājendralāl Mitra Bhāndārkar would assign this work to circa A D 1375 but Narahari, the author of *Rāja-nighantu* (between A D 1235 and 1250) has consulted this work

It is extensive in bulk and deals with a large number of drugs (dravyas) Medicinal qualities of as many as 870 plants have been given However, the author claims that his work is neither too brief nor too voluminous (nāti-laghur na chāti vipulāh) The last section, entitled 'miscellaneous' (mīśrakā), contains useful information about healthful

daily conduct (dina-charyā) and in different seasons (rtu-charyā)

The work is also called *Madana-vinoda* (Banaras, 1875) It is in 14 sections, containing 2,250 verses [See NIGHANTU]

Madana-vinoda Also called *Madana-pāla-nighantu*, it is designed to be a pharmacological glossary, "not too brief, nor too prolix, containing names of drugs that are well known, and giving the details of properties etc of those drugs" The work in 13 chapters (abhayā, etc, śunthī, etc, camphor, etc, gold, etc, *vata*, etc, grapes, etc, and vegetables, drinks, sweets, cereals, preparations of food, meat and miscellaneous) was completed in A D 1374 (samvat 1431)

Among metals zinc (yāsada) has not been mentioned But among the drugs introduced by outside influences are mentioned opium (ahīphena, Papever somniferum), bhang, Pārasika-yavāni (Hyseamus niger), mār-jārī, sindhūrī (Bixa orellana), Sulaimānī, Kharjūr (Anacardium occidentale), Khar-būj (cucumis melo), badām (Prunus amygdalus), anjūra (Ficus carica), guñjan, etc

The author, MADANA-PĀLA, was the son of Sādhārana, a scion of the Tāka dynasty of the town Kāshthā He was a nobleman, who patronized many literary men, including VIŚVEŚVARA (the author of *Madana-pāryāta*) and RAMARĀJA (the author of *Rasa-ratna-dīpa*)

This work has been very popular with the physicians, especially in the northern regions of the country (Naval Kisor Press, Lucknow, 1917, ed Nandakisor Sastri, Varanasi, 1933, Gangavishnu Sri Krishnadas, Bombay 1954)

Mādhava-dravya-guṇa A work of pharmacological interest, it seeks to summarize the "bhāva-svabhāva-vāda of antiquity" (intro verse) What this doctrine was, however, cannot be ascertained from the contents of this voluminous work of about 900 verses

The concluding verse claims that the author has gathered therein all relevant matter from the works of Suśruta, Charaka, Parāśara, Bhattāra-Hari-Chandra, Bheda, Vaideha, Hārīta and others

The work appears to follow closely *Sodhala-nighantu* (see under S) probably of 12th century, and it has been relied upon heavily by Tadarānanda's classic of the 16th century. It has been cited by Vopadeva (13th century), Ādhamalla (14th century), Śivadāsa-sena (15th century) and in *Śiva-kosha* (17th century)

The authorship of the work is uncertain. He is said to be the grandson of the celebrated Śrīkantha-datta (disciple of Vijaya-rakshita) and father of Purushottama, another pharmacological writer

Mādhava-kara Author of the celebrated work on pathology, *Rug-viniśchaya* (more popularly known as *Mādhava-Nidāna*) and also of a glossary of medical terms known as *Ratna-mālā* (or *Paryāya-ratna-mālā*, ed by Tārāpada Chaudhury, Patnā Univ.).

He was the son of INDU-KARA and a native of Śilāhrada in Bengal (as mentioned in his *Ratna-mālā*). The suffix 'kara' in his name suggests that he belonged to a Bengali family (according to Gananath Sen). He is sometimes but wrongly identified with Mādhava, the brother of the famous Sāyana

He is assigned to seventh century, because he is quoted by VRNDA in the eighth century and his work was translated into Persian during the reign of the Kaliph Harun-al-Rashid (c. A.D. 786), on the testimony of al-Beruni

Other works ascribed to him are *Āyurveda-prakāśa* and *Rasa-Śāstra* (or *Rasa-kaumudī*) [See MĀDHAVA-NIDĀNA]

Mādhava-nidāna A popular and comprehensive work on pathology (nidāna), it has

been an indispensable aid to physicians for over a thousand years. There is a saying that this work is supreme in the field of pathology (nidāne Mādhavah śreshtah). So named after the author, the real title of the work is *Roga-viniśchaya* (or *Rug-viniśchaya*), the first work on pathology

The work is an elaborate consideration of causes, symptoms, complications and treatments in 73 sections. The first section deals with the five factors necessary for proper diagnosis of a disease: nidāna (cause), pūrva-rūpa (premonitory symptoms), rūpa (manifested symptoms), upaśaya ('applied therapeutics'), to trace the cause from the effect, and samprāpti (development of disease)

The rest of the work deals with diseases: fever (jvara), dysentery (atisāra), chronic diarrhoea (grahani), piles (arśa), dyspepsia (agni-māndya), anaemia (pāndu), jaundice (kāmalā), chlorosis (halimaka), haemorrhage (rakta-pitta), pulmonary tuberculosis (rāja-yakshma), cough (kāsa), hiccough (hikkā), asthma (śvāsa), hoarseness (svara-bheda), loss of appetite (aroachaka), vomiting (chardi), abnormal thirst (trshnā), fainting (murchchhā), giddiness (bhrama), apoplexy (samnyāsa), alcoholism (madātyaya), insanity (unmāda), epilepsy (apasmāra), convulsions (ākshepaka), tetanus (dhanurvāta), hemiplegia (pakshāghāta), facial paralysis (ardita), paraplegia (ūrustambha), gout (vāta-rakta), delirium (ati-pralāpa), rheumatism (āma-vāta), colic (śūla), gastralgokenosis (parināma-śūlā), acidity (amla-pitta), constipation (ānāha), abdominal tumour (gulma), diseases of the heart (hrd-roga), stranguary (mūtra-krchchha), obstructed micturition (mūtrāghāta), calculus (aśmarī), urinary diseases (prameha), diabetes (udaka-meha), other associated ailments, obesity (medo-vrddhi), splenic enlargement (plihodarā), ascites (jalodara), intestinal obstruction (baddha-gudodara), dropsy (śoṭha), enlargements (vrddhi),

goitre (gala-ganda), scrofula (gānda-mālā), tumours (arbuda), cancer (raktārbuda), elephantiasis (ślīpada), abscess (vidradhi), inflammation (vrana-śoṭha), idiopathic ulcer (śārīra-vrana), traumatic wound (sadyo-vrana), fracture (asthi-bhanga), fistula-in-ano (bhagandara), skin diseases (kushtha), leprosy (mahā-kushtha), erysipelas (visarpa), exanthymata (śīta-pitta), small-pox (masūrīkā), minor ailments (kshudra-roga), measles (romantika), diseases of the face, ears, nose and eyes, diseases of the head, diseases of women, diseases of children, and poisons

The last section gives a list of diseases dealt with. The book ends with a prayer that all living beings be freed from the entire host of ailments (muñchantu jantavas tena nityam ātanka-santatim, verse II)

It can be seen that the work draws heavily from CS and SS. It devotes an entire chapter (66) to small-pox (*masūrīkā*), which during the days of SS was but a minor ailment.

The work was translated into Arabic under orders from the Kaliphs of Baghdad during the 9th century, and into Italian by Mario Vallduri in 1913-14. Among the editions, Jībānanda Vidyāsāgar's (Calcutta 1876), U C Datta's (Calcutta 1880), and Raghunāthprasād-Sītārām's (Bombay 1884) are the earliest ones.

There are many commentaries on it, the most popular among which is *Madhu-kośa* (jointly prepared by VIJAYA-RAKSHITA till 32nd chapter and ŚRĪKANTHA-DATTA (ed. Jībānanda-Vidyāsāgar 1876). Other commentaries include *Ātanka-darpana* (by VAIDYA-VĀCHASPATI), *Siddhānta-chandrikā* (by NARASIMHA), *Subodhinī* (by MADHURA-KĀYASTHA), *Nīdāna-pradīpa* and *Nīdāna-tippaṇī*.

Madhu-kośa. Also known as (*Vyākhyā - Madhu-Kośa*) this is a commentary on *Madhava Nīdāna* by VIJAYA-RAKSHITA (sections 1 to 32) and his student ŚRĪKANTHA-

DATTA (section 33 till the end). The date of this excellent commentary is 13th century. The earliest available Ms. is dated A D 1529.

The commentary explains the actual title of MN, viz., Roga-Viniśchaya as the specific (viśeshena) determination of the nature and course of disease in terms of its aetiology (vātajatvādī) and prognosis (sādhyaśādhya-tvādirūpena).

The commentary quotes CS, SS and AHR extensively. It also refers to the views of Jaijjata, Vāpya-Chandra (frequently), Kīrti-Kunda (Kārtika), Sudānta-Sena, Bhattāra-Harichandra, Gadādhara, Pālakāpya, Karavira, Parāśara, Hārīta, Bhoja, Jatūkarna, Gayasena, Chakra, Bhāluki, Kharanāda, and Drdhabala. It distinguishes between Vrddha-Suśruta ('elder Suśruta', the original compiler of the teachings of Dhanvantari) and Suśruta (the author of the present SS). The 'Kāshmīrī Recension' (Kāśmīra-pāṭha) of CS has been mentioned.

A *Bhāluki-tantra* is often quoted, we are not sure if this is the same as the *Bhela-Samhitā* that has come down to us.

The commentary becomes especially important, for many of the medical works from which it quotes are now lost, and the citations are often full verses.

Among the early editions of this commentary, Jībānanda-Vidyāsāgar's (1876) and the Nirṇaya-sāgar edition (along with another commentary *Ātanka-darpana*) may be mentioned. [See VIJAYA-RAKSHITA and ŚRĪKANTHA-DATTA]

Marīchi. He is a medical authority cited by Charaka. According to him, diseases are solely caused by the bodily fire (agni) inherent in the metabolic processes (pittāntargata) (CS, *Sū. Sth.*, 12, 11). Probably he held that among the three *doshās*, *pitta* was the dominant. He was also aware of the five-fold division of the functions of *pitta* *pāchaka*, *ālochaka*, etc. (cf. commentary of Chkpa

on above) Regarding the problem of what organ of the foetus gets initially formed, he held that it was impossible to determine (CS Śā Sth , 6, 21) Charaka mentions in this context that he belonged to Kāśyapa clan (Marīchih Kāśyapah) But in the *Kāśyapa-Samhitā* that is available, all sense-organs and parts of the body in the foetus are said to get formed simultaneously (yugapat) in the third month (p 46) The same view is held by Suśruta

works spuriously attributed to him He was born a Brahmin but turned a Buddhist, and was intimately associated with the emergence of Mahāyāna branch of Buddhism He was a native of Vīdarbhā (modern Berar) in Mahākoshala, but lived for the most part of his life in the monastery on mount Śrī-parvata or Śrī-śaila near Krishnā river (in Āndhra Pradesh) He was a disciple of the siddha, SARAHĀ-PĀDA He was connected with the Nālandā University, and was the teacher of Ārya-deva who later became the chief pandita of that university

An account of the life and career of Nāgārjuna which was in Sanskrit (and now lost) was translated into Chinese by Kumārajīva in A D 401 There are also Tibetan accounts including an elaborate one by the historian Lama Tārānātha According to these accounts, he succeeded the patriarch Pārśva and administered the Buddhist community for 62 years He was a friend and counsellor to the Śātavāhana (Huen Tsang's Šo-to-po-ho) king, Gautamī-putra (or Yajña-śrī) Śātakarni, who built a monastery for him on Śrī-śaila

His probable date is hotly debated and is variously given Fleet, around 57 B C , Lassen, around A D 23, Vincent Smith, about A D 120, S Beal, A D 166-200, Bhandārkar, about A D 278 But since he was a contemporary of Kanishka and the Śātavāhana king according to most accounts (Kumārajīva, Huen Tsang, Lama Tārānātha, and Kalhana's *Rājataranginī*, 1, 172 and 173), he may safely be assigned to a period between A D 80 and 104

He was a prolific writer, and wrote on many subjects (philosophy, religion, medicine, chemistry, alchemy), and whatever he wrote became a classic Among his philosophical writings, *Mūlamādhyaṃakā-kārikā*, *Yukti-shashthikā*, *Śūnyatā-saptati*, *Daśa-bhūmikā-śāstra* and *Māhāyana-viśvāśaka* are well known and frequently studied His *Prajñā-pāramita-sūtra-śāstra* (gloss

N

Nāgārjuna He is a redactor (pratisamskartā) of ŚS (according to Dalhana) and reputed to be the author of the final portion of ŚS, viz , uttara-tantra (according to Cordier) He is author of *Rasaratnākara* and several recipes and formulae

By all accounts, the most remarkable among Indian thinkers, Nāgārjuna has also been the most enigmatic figure in Indian history So numerous are the works ascribed to him, and so varied are the accomplishments credited to him, that Western scholars are either inclined to suspect his historicity altogether (e g , Wissiljew who regarded him as wholly mythical) or assume the existence of several Nāgārjunas (e g , M Winternitz who postulated four Nāgārjunas the Buddhist writer, the Tāntrik writer, the Medical writer and the alchemist)

However, the Indian view (as also the Chinese and Tibetan) has all along held that there was only one Nāgārjuna, who was all these (poet, philosopher, physician, alchemist and saint), although there are many

on *Pañchaviṃśati-prajñā-pāramitā*) is a mystical work which made a deep impact on the development of the Mahāyāna sect. His *Suhrlekha* (letter to his royal friend Śātavāhana, translated into Chinese by Gunavarman between A.D. 424 and 431) was a short manual that was popularly read and memorized when the Chinese traveller I-Tsing visited the country (7th century).

In the field of medicine, he is reputed to have redacted the whole of *SS*, which probably was in a poor state of preservation during his days. The present shape of *SS* is probably due entirely to Nāgārjuna's reconstruction. The famous commentary on *SS*, Dalhana testifies to this fact (*NiS Sū*, sth, 1, 1, *yatra yatra paroksho niyogah, tatra tatraiva pratisamskartr sūtram jñātavyam iti, pratisamskartā pī'ha Nāgārjuna eva*).

It is also suggested that the last section in *SS* (*Uttara-tantra*) which was not in the original *SS*, was supplemented by Nāgārjuna (Cordier). It deals with diseases of the eye, ear, nose and head (26 chapters, *śālākya*), management of the diseases of children (12 chapters, *kaumara-bhṛtya*), general therapeutics (21 chapters, *kāya-chikitsā*), insanity and epilepsy (three chapters, *bhūta-vidyā*) and general considerations such as taste, hygiene, medical terminology and the theory of *doshas* (four chapters).

Two other medical works, *ārogya-mañjarī* and *Yoga-sāra* are ascribed to him. The latter has been quoted by VANGA-SENA.

The most important contribution of Nāgārjuna, however, is in the application of chemistry, metallurgy and alchemy to medicine. Several works in this field are ascribed to him, e.g. *Rasa-ratnākara* or *Rasendra-mangala* (on the use and preparation of mineral drugs), *Rasa-kachchha-puta* (on purification of mercury and preparation of mercurial powders, etc.), and *Yoga-śataka* (a book of a hundred recipes also translated into Tibetan, sometimes ascribed to Vararuchi). But the authorship of these works has

been a matter of some dispute among scholars.

He is said to have written two works on alchemy, *Lauha-śāstra* (according to *CS*) and *Rasendra-chintāmaṇi* which have not come down to us. There is a *Kaksha-puta-tantra* (or *Siddha-chāmundā*), a work of 1800 verses, in his name, but it is a recent work dealing with magic and witchcraft. *Rati-śāstra* which is in the form of a dialogue between Nāgārjuna and Tundī on the subject of sex and love, has been ascribed to Nāgārjuna though altogether unjustifiably.

The formulae and recipes that are current in his name include a *vartī* (against cataract), *Abhra-rasāyana* (for cough, fever, asthma and tuberculosis), *Haridrā-khanda* (germicide, remedy for skin ailments, ulcers, fistula, jaundice, etc.), *Ghoda-cholirasa* (for colic, consumption, intractable cough and asthma), *Nāgārjunābhra* (for heart-diseases, weakness and indigestion), *Rasābhavatī*, *Mṛta-samjivini-gutikā*, *Siddha-rasendra* and *Nāgārjuna-yoga* [See *SS*, *RASARATNĀKARA*, Nāgārjuna's recipes, and *RASA SCHOOL OF MEDICINE*].

Nakula He is the author of a book on the treatment of horses, *Aśva-chikitsā*. Traditionally he is identified with one of the Pāṇḍava brethren, who in the *Mahābhārata* is said to have learnt the equestrian art from Drona. He claims to have specialized in the science and management of horses, in riding them, and in curing their ailments (*Virāta-parvan*, 12).

He is said to have written another work on general therapeutics, *Vaidyaka-sarvasva* (according to *Brahma-vaivarta-purāna*, *Brahma-khanda*, ch. 16), which is no longer extant [See *AŚVA-CHIKITSĀ*].

Nāvanīṭaka A compilation of medical formulae (*yoga*) from different ancient authorities, this text was prepared during the fourth century A.D. Included in the *Bower*

MSs, this is the most extensive book and also the most important one in the collection. It inaugurated the long line of short manuals of formulae in Indian medicine.

It consists of seven sections, the opening section dealing with the medical uses of garlic (*Laṣuna-kalpa*) followed by general principles (*Sūtra-Sthāna*), terminology (*paribhāṣhā*), and ointments for the eye and face. The second section states the purpose of this compendium, and describes the formulae in general. It claims that the important formulae prepared by great sages of yore have been included here (*prāk-praṇītair maharshinām yoga-mukhyais samanvitam*). All essential medicinal preparations (pills, oils, ghee, enema, collyrium, etc.) have been listed.

The third section continues the listing of formulae while the fourth and the fifth prescribe incantations (*mantra*) for curative ends. The sixth treats of toxicology and gives the hymn of *Mahā-māyūrī*, which is further dealt with in the last section.

Written in mixed Sanskrit, the formulae are versified (in *āryā*, *trishtubh* and *anushhtubh* metres). It draws extensively from *Charaka* and *Bhela*. 29 formulae from the former and 15 from the latter. There are 44 other formulae extracted from different sources like *Agastya*, *Dhanvantari* and *Jīvaka* (two formulae from each), *Nimi*, *Suprabha* and *Kankāyana* (one from each), *Kāśyapa* (numerous formulae of his are enumerated). It is indeed a unique compilation of formulae, some of which are anonymous and not found elsewhere.

The title suggests that even as the nutritive and delicious butter (*navanīta*) is got by churning the curds, the helpful formulae, are extracted from numerous authorities. Explicit mention has been made of many early writers, e.g., *Ātreya*, *Hārīta*, *Parasara*, *Bhela*, *Gārga*, *Sāmbarya*, *Susruta*, *Vaśishtha*, *Karāla* and *Kāpya*.

The eulogy of garlic (*laṣuna*), which is not

found in *CS* or *SS* (although its mention is there) is in significant detail in this work. (It can be found also in *Kāśyapa-samhitā* and *AH*.) The orthodox prejudice against eating garlic has been explained here as due to its foreign origin and strong odour (*na bhakshyanti enam ataś cha virprāh sanra-samparka-vinihsrtatvāt, gandhogratām apy ata eva chāśya vadanti śāstrādhigamap-ravināh*).

This is obviously a work compiled by Buddhist enthusiasts, especially of the *Mahāyāna* persuasion. We find in the last two sections, incantations and hymns concerning the folk goddess incorporated into the *Mahāyāna* pantheon. *Mahā-māyūrī* incantation has been described by the familiar *tāntrik* expression 'The princess among *vidyās* (*Ānanda-mahā-māyūrī vidyārājāya*), uttered by the Buddha (*tathāgata-bhāṣitayā*), for the protection (*rakṣhā*) of the patient'.

The compilation suggests the period when medicine and magic were together pressed for the patient's relief, but magic not obliterating the value of medicine. The two were independent but complementary spheres. [See BOWER *MSs*]

Nighantu. An indispensable equipment for the practising physician is an intimate acquaintance with the *Nighantu*. It is said that "the physician without *Nighantu* would come to ridicule, even as a scholar without grammar and an archer without practice."

Nighantu is vocabulary, glossary, "a collection of names" (*nāma-samgraha*), according to Hemachandra. Its original significance was a list of Vedic words (*Aupamanyava* and *Yāska*). The first *Nighantu*, on which *Yāska* prepared his *Nirukta*, (around 800 B.C.) comprised five sections (*kāndas*) the first three of which dealt with synonyms, homonyms and names of deities (*Naighantuka-kānda*). Topics dealt with here included human anatomy and medical

flora (about a hundred) Among the glossators of this Vedic *Nighantu* were SKANDASVĀMIN (A D 1060) and DEVARĀJA-YAJVA (12th century, *Nighantu nirvachana*)

The tradition of preparing glossaries was continued by Vyādi, Kātya, Utpala and Dhanvantari The glossary prepared by the last alone has survived, although in a later recension known as *Dhanvantari-nighantu* (or *Dravyāvali*) It was the first medical glossary It listed more than 370 medical flora (dravyas) and gave along with their names and synonyms brief descriptions of their pharmacological characteristics It provided the model as well as the inspiration for later glossaries

Amara-kośa (*Nāma-lingānuśāsana*), the celebrated lexicon prepared by AMARASIMHA (5th century), in three sections (*kāndas*), was a major achievement The fields covered by this encyclopaedic dictionary included human anatomy, medicinal drugs and plants But the treatment was confined to the giving of synonyms

Medical glossaries gave not only synonyms but meanings (*dravyābhīdhāna*) as well as pharmacological properties (*dravya-guṇābhīdhāna*) of drugs such as chemical characteristics (*guna*), abiding taste (*rasa-pradhānam āhāra-dravyam*), and drug component (*virya*), digestive transformation of the *rasa* (*vipāka*), and the toxic effects (*dosha*) They also provide technical details like the terminology (*paribhāṣā*), weight, measure and dosage (*māna*) of drugs, and preparations (*kalpa, yoga*)

The names of drugs are variously derived from convention, (*rūdhī*), nature (*svabhāva*), local usage (*deśokti*), external appearance (*lānchhana*), resemblance (*upmāna*), effect (*vīrya*) or a deliberate naming by some one (*itarāhvaya*) (*Rāja-nighantu*) Some drugs are used as articles of food, when the main characteristic is nourishing taste (*rasa-pradhānam āhāra-dravyam*), and some are employed as medicines, when the

systemic effect is the predominant characteristic (*vīrya-pradhanam aushadha-dravyam*) Others are used for their poisonous properties (*visha-guna*) Drugs are generally classified according to their food-value, curative value, nourishment value, and poisonous properties

The essential aspects of a medical glossary would thus be pharmacological (*dravya-guna*), pathological (*dosha-vaishamya*) and therapeutic (*chikitsā-tattva*) A *nighantu* is therefore generally known as *Dravya-guna-samgraha*

There appear to have been *nighantus* right from the days of Charaka and Suśruta, there are references to the works of Kāśyapa, Bhoja (*Abhidhāna-mañjarī*) and others in this direction, but none of them is available

The earliest medical glossary that is extant, barring *Dhanvantari-Nighantu*, is Mādhava-kara's *Paryāya-ratna-māla* (about A D 700), which is mainly a synonymous glossary of botanical terms useful to physicians in general *Paryāya-muktāvalī* by HARISHENA is another early glossary It is in 23 sections (*vargas*) dealing not only with the vegetable kingdom but with metals, minerals, precious stones and cooked food *Śabda-chandrikā* by CHAKRAPĀNI-DATTA (about A D 1060) is another medicinal glossary in nine sections dealing with herbs, minerals, alcoholic drinks, and preparations of medicines SUREŚVARA's *Śabda-pradīpa* (about A D 1075) is likewise a glossary of botanical terms, the names of plants being arranged according to the divisions of vowels and consonants The author was the court physician to a king of the Pāla dynasty, BHĪMA-PĀLA

HEMACHANDRA (1088-1172) is the renowned author of *Abhidhāna-chintāmani*, which included matter of botanical and medical interest (*Nighantu-śeṣa*)

Among the popular glossaries relied upon by physicians are *Sodhala-nighantu* (12th

century) following Dhanvantari, *Madana-pāla-Nighantu* (or *Madana-vinoda*) by Madana-pāla (1374), which is the most voluminous vocabulary (2,250 verses in 14 sections), *Dravya-guna-Śata-Śloki*, (also called *Pathyāpathya-nighantu*) of Trimalla-bhatta (between 1383 and 1499), consisting of a hundred verses in 14 sections *Rāja-Nighantu* (or *Abhidhāna-chūdāmanī*) of Narahari (about 1400), *Śivakośa* (1677) by Śiva-datta, *Pathyāpathyavibodhaka* by Kaiya-deva (1710), *Rājavallabha-dravya-guna* by Rājavallabha and Nārāyana-dāsa (1760), and *Paryāya-muktāvalī* by Hari-chandra Sena

Celebrated manuals like *Ashtāngahrdaya* and *Bhāva-prakāsha* were equipped with their own glossaries (*Ashtānganighantu*, *Vāgbhāta-kosa*, *Bhāva-gunarātna-mālā* etc.)

There are references to glossaries which are no longer available Vopadeva's *Hrdaya-dīpikā*, Chandra-nandana's *Dravya-guna-nighantu*, Aśoka-malla's *Nighantu-sāra* and *Abhidhāna-kosas* of Indu and Vāchaspati

Among the recent works of this nature, the most important are *Nighantu-ratnākara*, *Brhan-Nighantu-Ratnākara*, *Vaidyaka-śabda-sindhu*, *Sālagrāma-Nighantu*, *Paryāyārṇava* and *Ayurveda-mahodadhī*

There is a tendency, noticeable in more recent *nighantus*, to incorporate modern botanical knowledge (e.g., in Raghunāth Indra's *Nighantu-samgraha* and Virāja-charana Gupta's *Vanaushadhi-darpana*)

There are regional preferences among physicians like *Dhanvantari-Nighantu* being popular in and around Banaras *Bhāva-prakāsa-nighantu* and *Rāja-vallabha-nighantu* in Bengal, *Madana-pāla-nighantu* in the Hindi-speaking areas, and *Rāja-nighantu* in Mahārāshtra and Karnataka This is not surprising because the more recent glossaries contain synonyms and explanations in

the regional languages, e.g., *Śabda-chandrikā* (Bengālī), *Madana-pāla-nighantu* (Hindī) and *Rāja-nighantu* (Marāṭhī and Kannada)

There is a tendency for the glossaries to increase in bulk over years, for new drugs and new properties of the old drugs are discovered, especially the drugs drawn from the vegetable kingdom The RV itself contains a small nucleus of information about medical flora, the *Vedic Index* lists about 260 herbs Kautilya's *Artha-śāstra* (chapters 32, 36, etc.) contains names of 330 medicinal plants The number swells to 385 in SS (*dravya-samgrahaniya* section) CS lists about 500 *Dhanvantari-nighantu* has almost the same number (490) BHĀVA-MISRA provides a list of 530 plant-products (of which about 400 were of actual drug value) *Madana-pāla-nighantu* has 870, and *Nighantu-ratnākara* 820 The enlarged *Brhan-nighantu-ratnākara* lists over 1600 of them!

The herbal drugs known by name to the present-day physicians number about 2000, more than 500 of them being antihelmintic (*krmināsaka*) According to Sankar Dājī Sāstrī Pāde, 927 are the drugs of real value Most of the physicians, however, work with not more than 600 drugs in all

Nighantu-Ratnākara A recent compilation of extracts from old and medieval medical classics, dealing with diagnosis, eight-fold clinical examination, treatment of diseases, metals and their purification, medical terminology, anatomy, preparation of decoctions and tinctures, dietetics, pharmacology and so on

This was got compiled in three parts by V V GODBOLE in 1867 (Bombay), and also rendered into Marāṭhī

Nighantu-Samgraha A descriptive *materia medica* in Sanskrit prepared by RAGHUNĀTH-INDRA (Kato-bhatta) in A D

1893 No longer available, it is said to have contained details of as many as 607 drugs, most of which were of plant origin (Noticed in P V Sharma DGV)

Nimi: He was an ancient ophthalmologist from Videha (included in the present-day Uttar Pradesh) Perhaps he was a King, sometimes identified with Janaka His was an honoured name in minor surgery (Śālākya-tantra) While no work of his is available now, his views are extensively quoted in several standard medical texts He is said to have identified 76 eye-diseases (cf Dalhana on SS, 6,1) He has a cure for cataract (fimīra) "One part of each of the following white antimony (srotoñjana), cuttle-fish bone (sāmudra-phena), white pepper (śveta-marīcha) and long pepper (pippalī), add to them one part of salt (lavana) equal to an aksha (?) Powder them all finely, and this would be ideal for removing cataract" (given in *Bower MSs*)

Valuable details concerning eye-diseases can be gleaned from citations from Nimi preserved in *NiS* and *VyK* and reproduced in *HIM*, vol II, pp 339-350 [See DISEASES OF THE EYE]

Among the views ascribed to him, the concept of seven tastes (sweet, acid, saline, pungent, bitter, astringent and caustic madhura-āmla-lavana-katu-tikta-kashāya-kshāra), the five-fold classification of bodily air in terms of locations (eka eva vāyuh, śthāna-bhedāt pañchadhā), and the initial formation of the sense-organs as seats of the mind in the foetus (indriyāni buddhyadhis-thānāni iti krtvā) are noticeable (*CS, Śā-Sth* 6, 21)

P

Pālakāpya: He is the author of a comprehensive work on elephants, their diseases and treatments, *Gaja-vaidya* (according to Burnell) or *Hasti-āyurveda* (ed Ānandāśrama Press, Poona) He is said to have been the son of a sage, SĀMAGĀYANA by name, and to have taught ROMAPĀDA, the king of Champā (or Anga?), all about elephants Nothing more is known about the author or the time in which he lived It does not, however, appear to be an ancient work

The work is in four books (sthānas) Mahā-roga-sthāna (major diseases, classification of diseases, fever, tetanus, chlorosis, flatulence, fainting, diseases of the head and the foot, sweating, eye-diseases), Kshudra-roga-sthāna (minor diseases, vomiting, diarrhoea, swooning, wasting, fatigue, poisons, snake-bite, boils, erysipelas, fright, retention of urine, weakness, inflammation, wounds, prickly tongue, insanity, rheumatism, excitement, warts, ageing, colic pain, diseases of the ear, disturbances of digestion, skin diseases, and discharge of mada in rut), Śalya-sthāna (surgery, wounds, abscess, ulcer, fistula, sinus and their treatment, burns, bites of dogs, insects, spiders and snakes, pregnancy, difficult labour, tooth-extraction and surgical instruments), and Uttara-sthāna (supplement, oleogenous medicines, enemata, snuffs, derangement of rasas of the body, food, stables, unfavourable prognosis, expiatory rites and several recipes)

The book also deals with classification, anatomy and physiology, care and management, dietetics and complications

Content-analysis has been provided in *HIM*, vol II, pp 402-423

Parāśara An ancient sage to whom a medical work, *Parāśara-Saṃhitā*, is ascribed he was a contemporary of AGNIVEŚA No longer extant, the work is cited by several later medical writers including ŚRĪKANTHA-DATTA, ŚIVADĀSA-SENA and VIJAYA-RAKSHITA Another work on the medicinal uses of butter-milk, *Takra-kalpa*, which is available, is also ascribed to him The patient undergoing treatment by butter-milk is instructed in this work to refrain from sleep during day-time, sexual intercourse, exercise, untimely eating, untimely bath, and suppression of physiological urges (*vēga-sandhāranā*)

Some formulae, like *Parāśara-ghṛta* in tuberculosis and *Amṛtādamṛta-rasona-pinda* in cases of fracture of bones and broken limbs, are ascribed to him

There is a botanical treatise which also treats of the diseases of plants, *Vṛkshāyurveda*, which is ascribed to Parāśara The MSs of this work was discovered by Jogen-dranāth Bhishagratna of Navadvīpa (Bengal), and published by his son N N Sircar in 1950 A work in six sections, it deals with seed formation (*bījotpatti*), different kinds of plants (like herbs, creepers, bushes and trees), and the treatment of plant diseases

Paryāya-ratna-mālā An interesting medical lexicon in 1754 verses, prepared by Mādhava-kara (7th century A D), the celebrated author of the *Nīdāna* named after him The main interest of this work consists in the synonyms of drugs [See NIGHANTU]

Pathyāpathya-vibodhaka A descriptive pharmacological work prepared by KAIYADEVA as supplement to his own glossary of medical terms, *Nāma-ratnākara* The date of this work is uncertain, but according to P K Gode, it must be prior to A D 1450

The work in eight sections begins with medicinal substances and preparations

(*ośadhī-varga*, Meharchand Lakshmandas, Lahore, 1928), followed by sections dealing with metals, cereals, drinks, preparations of food, and meat The work closes with a miscellaneous section (*miśṛaka-varga*), and a section containing terms with multiple meanings (*nānārtha-varga*) has been added

It is likely that BHĀVA-MĪŚRA was acquainted with at least the first section of this work

R

Rāja-Nīghantu Also called *Abhidhāna-chudāmanī*, it is an elaborate work designed to be a "compendium of the names and medicinal properties of substances" (*dravyābhidhāna-guṇa-saṃgraha*) The author NARAHARI hailed from Kasmīr, but appears to have lived in different parts of the country He provides names of drugs in Sanskrit, Prākṛt and Apabhraṃśa and regional synonyms in Marāṭhī, Kannada and Telugu For description of drugs he has seven considerations usage, effect, regional names, form, similarity, potency and place of origin The work, as admitted by the author, follows closely the views of *Dhanvantari-nīghantu* (*dhanvantari-matā-nusārakam*)

The work is in 23 sections dealing with different kinds of soil (four-fold according to caste-names, brāhmaṇa, etc, and five-fold according to the predominant *mahābhūta*), drugs, trees, fruits, metals, drinks, milk, meat, human beings, animals diseases and so on The work was probably the first to accord the place of primal im-

portance to pharmacology (dravya-guna). Later, pharmacology, diagnostics (nidāna), therapeutics (kāya-chikitsā), major surgery (śalya), minor surgery (śālākya), psychotherapy (bhūta-vidyā), paediatrics (kaumāra-bhṛtya) and toxicology (agadatantra) were regarded as the eight-limbs of Āyurveda

The date of the work is hard to ascertain, but 17th century has been suggested as the probable date. The work has been printed, and is popular among physicians (Ānandāśrama, Poona 1925, and Calcutta, 1933)

Rājavallabha-Nighaṇṭu. A medical lexicon dealing with drugs and their properties relevant to the daily conduct, grouped into six sections concerning early morning (prābhātika), late morning (paurvāhnikā), noon-time (mādhyaṇīkā), after-noon (aparāhnikā), evening (nīśābhava), and medicinal (auśadhiya) (Venkateshvara Press, Bombay, 1895)

Nothing is known about the author of this work, RĀJA-VALLABHA-VAIDYA. His date too is uncertain. But the present text has been redacted by NĀRĀYANA-DĀSA, whose date is given as around A D 1760

Rasa-Vaiśeṣika-Sūtra. A work on the basic ideas of Indian pharmacology ascribed to Nāgārjuna. It is assumed that this was the Nāgārjunā who redacted SS. Whatever the truth of this assumption, it is a fact that Suśruta's position agrees on essential points with the position of this work. This work has been cited frequently in Chandrata's *Chikitsā-kalikā*. There is a commentary on this work by Narasimha (Trivandrum, 1928)

Rasāyana. The technique by which the rasa is obtained. Rasa is the essential ingredient of health and life, basic to the other constituents like blood, bone and marrow, and

the source of happiness as well as the ultimate goal of life [See RASA]. The technique that arrests aging, wards off death, eliminates illnesses, and strengthens the sense-activities is 'Rasāyana'

The expression is found in the early medical texts like the CS, KS, SS. Originally the technique consisted only of herbal formulae "Yaj jarā-vyādhi-śamanam auśadham tad rasāyanam" (Dhan Nī also, CS, 6,1,8) but later (but not until about 1380) metals and mercurial preparations for internal and external use were prescribed

The preparations are tonics and elixirs, especially useful in restoring the lost youth, in improving memory, sharpening intelligence, intensifying the bodily glow, strengthening the organs and securing longevity. In this sense, Rasāyana-tantra, has been included in the eight-fold (ashtāṅga) Āyurveda [See EIGHT-FOLD ĀYURVEDA]

The condition of old age is described as the diminution in the quality as well as quantity of basic fluids and tissues, and Rasāyana seeks to correct this deficiency and restore health and vigour. Causes of old age, according to Charaka, are improper and untimely food, sleep during the day, excessive alcohol drinking, immoderate sex activity, unsuitable and abnormal exercises, and emotions like anger, fear, sorrow and greed, aging is also caused by serious disorders of body metabolism (e.g. loosening of joints of muscles, slackening of flesh, accumulation of fat, impurity of blood, decrease in bone-marrow, insufficient formation of semen, and reduction of vitality or ojas)

Several arishtas, āsavas and rasāyanas are prescribed in the above conditions (Drākshārīṣhta, Chyavana-prāśa, Amṛta-prāśa-rasāyana, etc.)

Among the exploits of the Aśvins recounted in RV is the restoration of youth to the decrepit but lustful Chyavana (1.116.10, 1.117.13, 1.118.6, also cf. CS, 1.4.46

Chyavanah kāmī vrddhah san vikṛtū gatah, vīta-varna-svaropetah kṛtas-tābhyām punar yuvā) *AV* also mentions the restoration of youth (rejuvenation) by drugs Vājasaneyī-samhitā (12,81) speaks of four kinds of plants somavatī (which prolongs life), aśva-vatī (which increases sexual vigour), ūrjjayantī (which increases bodily strength) and udojaśa (which gives lusture) They are described as āyur-vardhana, vājīkarana, vrshya and rasāyana respectively

Two techniques of rasāyana are prescribed according to Vāgbhata (*AHr, Utt sth*) one by staying within a hut (kutī-praveśikam) for a prescribed period, and the other in open air (vātātāpikam) Details of treatment including the drugs used are specified in early medical texts

Rasa-Hrdaya-Tantra This is an old work cited by the author of *Sarva-darśana-samgraha*, and ascribed to BHIKSHU GOVINDA, son of SUMANO-VISHNU, and patronised by the chieftain of the Kīrāta country (Bhūtān?)

In nineteen chapters (avabodha) the work deals exclusively with mercury, which it is claimed, "is the only substance that can render the body free from old age and death" (eko'sau rasa-rājah śarīram ajārā-maram kurute, 1,13) The author's aspiration is to make mankind free from poverty (nīrdāridryam) and old age and death (nīr-jarāmaranam)

The author appears to be a Buddhist (cf 19,78 Tathāgatah śreyase bhūyāt) [See RASA SCHOOL OF MEDICINE]

Rasa-Ratna-Samucchaya This elaborate but anonymous work in 30 chapters deals with the Rasa school of medicine and is ascribed to VĀGBHATA son of SIMHA-GUPTA (sūnūnā Simha-guptasya, 1 8), who may be different from the celebrated author of *AHr* and *AS* The composition of this work may be placed in the 12th cen-

tury

The topics dealt with in the first ten chapters are the source, preparation, treatment and value of different kinds of mercury (rasa), cinnabar (hingula), metals (gold, silver, iron, copper, zinc, tin, lead, brass), the mahā-rasas (mica or talc, turmuly, iron pyrites, fool's gold, bitumen, bismuth, calamine), the upa-rasas (sulphur, red ochre, sulphate of iron, orpiment, galena, etc.), the sādhanā-rasas (Himalayan mineral dust known as kampilla, arsenics, ammonium chloride, ambar, etc.), and precious stones

The rest of the volume deals with diseases and treatments of diseases involving principally the rasa-drugs, fever, haemorrhagic diseases, dyspnoea, tuberculosis, vomiting, heart-diseases, piles, diarrhoea, sprue, indigestion, stranguary and other urinary disturbances, diabetes, abscess, abdominal tumour, colic pains, acidity, obesity, anaemia, skin ailments, intestinal parasites, epilepsy, insanity, ailments during pregnancy, diseases of the ear, nose, throat, fractures and cancer are extensively dealt with

Debility, senility and loss of sexual vigour come in for elaborate consideration, treatments pertaining to rejuvenation (rasāyana) and virilification (vājīkarana) are discussed in great detail, and numerous recipes are given (chapters 26 and 27), cures for poisons of various kinds are suggested (chapter 29), and the medical value of poisons in various diseases are also indicated (29,47-159)

Of special interest are the sections dealing with the alchemical laboratory (rasa-sādhana-rasa-śālā-rasa-mandapah 6,II-16 and rasa śālā 7,1-4), educational matters (6, 1-10), rituals connected with alchemic preparations (6, 28-42), chemical apparatus (yantra, about 40 of them, 9,3-57, crucibles of various kinds, 10, 1-31) and chemical treatments (11,1466) [See RASA SCHOOL OF MEDICINE]

The book is available in its entirety (Ānandāśrama Skt Series, Pune 1890, ed Devendranāth Sengupta, Calcutta 1915, ed, Ambikā-datta Śāstrī with Hindī comm *Suratnojjvalā*, Chowkhamba Sanskrit Series, Benaras, 1939) [See RASA SCHOOL OF MEDICINE]

Rasārnava This is an anonymous work of the twelfth century, in the form of a dialogue between Pārvatī and Parameśvara. In 14 chapters (patalas), it deals with the chemistry and alchemy of mercurial and metallic preparations, apparatus (yantra, mūshā) and implements [See THE RASA SCHOOL OF MEDICINE]

The rasa school of medicine Two medical traditions have prevailed in the country from very early times. One is the general therapeutic complex (comprehending internal medicine and surgery), said to have been first taught by Brahmā and handed down by him through a series of teachers like Atri, Agniveśa, Charaka, Dhanvantari and Suśruta, the other is the Rasa school of medicine, first taught by Rudra and later expounded by the *Siddhas*, Chandrasena, Rāvana, Māndavya, Bhairava and others. Nāgārjuna's name is the only one that is included in both the lists of medical teachers. But he is more celebrated as 'Rasa-siddha'.

RUDRA, the inaugurator of the Rasa school, is celebrated as "the first of physicians" (prathamō daivyo bhīṣak, YV, 16,5) and "the best among physicians" ('bhīṣak-tama', RV, 2,7,16) in the Vedic corpus (also cf RV, 1,43,2, 1,114,1, 2,33,2, 5,42,11, 6,46,3 and 74,2, YV, 3,59, *Taittirīya-samhitā*, 4,5, etc). That his approach was mainly alchemic and occult becomes evident in the works ascribed to him. *Rudra-yāmala-tantra* (dealing with therapeutic uses of mercury), *Dhātu-kalpa* (medical properties of metals), *Pārada-kalpa* (preparation of mercury), *Haritāla-kalpa* (preparation of

yellow orpiment) and *Abhraka-kalpa* (preparations from mica). As many as 60 mercurial preparations (rasas) are associated with his name.

The theoretical postulates of this school are close to *Saiva-siddhānta*, *Raseśvara-darsana* and the *Tantras*. The legendary accounts of the life and work of 64 *siddhas* (nine among them being most famous as nava-nātha-siddhas) who lived during the early centuries of the Christian era, have contributed significantly to the celebrity of this school. Nāgārjuna is counted among these *siddhas*, and it was he who crystallized the Rasa school of thought as well as medicine.

The identity and date of this Nāgārjuna have been debated. Scholars are inclined to regard him as different from the Mādhyamaka-philosopher and the redactor of SS, who may have lived around the beginning of the Christian era. This Nāgārjuna is specifically designated as 'Siddha-Nāgārjuna'. He is even said to have been a Jain. MERUTUṄGA refers to him as a student of the Jain master Padalīpta (*Prabandha-Chintāmani*), and as teacher of the king Śātavāhana of South India. al-Beruni mentions a Nāgārjuna as having lived a century prior to his visit to India (about A.D. 1000).

Whatever the position, there are books and formulae ascribed to Nāgārjuna [See NĀGĀRJUNA], which suggest that he was prominently involved in the popularization of the Rasa school. This school became popular in two mainstreams: one mainly alchemic (dhātu-vāda, transmutation of metals) and the other chiefly therapeutic (rasa-chikitsā, preparation of metallic and mercurial recipes for internal and external use). Nāgārjuna's name is associated with both the branches.

The traditional list of teachers of the latter branch includes CHANDRASENA (sometimes regarded as the founder of the school), RĀVAṆA (king of Lankā), MĀN-

DAVYA, BHĀSKARA, SURASENA KAMBALA, VYĀDI (the grammarian), GOVINDA, LAMPALA and HARI. Among the authors of source-books are named RASĀṆKUŚA BHAIKAVA, NANDI, SVACHCHHANDA-BHAIKAVA, MANTHĀNA-BHAIKAVA, KĀKA-CHANDI and VĀSUDEVA (cf RRS)

Most of these are little more than names and we do not have any books of this school that are really ancient. There is a commentary on Kankāla-Rasādhyāya by Merutuṅga, composed in A D 1386 and probably this is the oldest book on the subject that we have. *Sarva-darśana-samgraha* (14th century) refers to some works like *Rasārṇava* (also mentioned by BP), but they are not available. Among the later source-books, which represent the ascendance of the Rasa school of medicine, is *Rasa-ratna-samucchaya*, (the oldest Mss of which is dated A D 1699). Most of the important ideas and recipes of this school appear to have crystallized during 10th to 16th centuries.

But the foundations for the school were laid even during the Vedic times, probably earlier. The knowledge of metals was extensive and fairly accurate during the dawn of Indian civilization. The value of gold for economic, magical, and medicinal purposes was known, and the employment of metallic preparations for internal and external use was probably appreciated even then.

But classical medicine was slow to recognize the therapeutic value of metals, minerals, shells, precious stones, and chemical preparations. CS makes only casual references to metallic preparations involving mercury (CS *Chū Sth*, 7, 71). The references in SS are comparatively more direct (CS, *Chū Sth*, 25, 39). Mercurial compounds and galena or sulphide of lead (aṅjanā) are mentioned there, but only for external application.

It was not until the days of BP (about A D 1363) that we find the traditional physicians

taking interest in mercury as a therapeutic aid. The author of BP was acquainted with chemical techniques (like purification of metals and calcination) and refers to several works such as *Rasārṇava*, *Rasa-chintāmani* and *Rasa-sindhu*. From about the 15th century, the recipes involving metals and mercury began to be included in the general medical glossaries (*nighantu*), and this was probably due to Arab influence. The first to mention mercurial preparations as cures for fever, diarrhoea, jaundice, lung troubles and other diseases was *Rāja-nighantu* (13, 111). Mercury was especially prescribed for syphilis (*phiranga*) and skin ailments.

However, Indian medicine gradually tended to discourage the employment of the recipes of this school and confined its *materia medica* to the vegetable world. Nevertheless, the recipes of this school were theoretically hailed as superior to the other kinds, for in this case a small dose of medicine would be enough to cure both chronic and acute diseases, health is restored quickly, dietary regimen is unnecessary, clinical examination of the doshas and the dhātus becomes irrelevant, and consideration of seasons and places is likewise unnecessary (*Rasendra-sāra-samgraha*). Of the three types of treatment divine (*daiva*), human (*mānusha*) and demonic (*āsura*), the Rasa-medicines were included in the first group, while herbal medicine was classed under the second, and surgical operations under the third group.

Rasa, a general name for mercury, has also other meanings in the medical context: fluid, sap, flavour, taste, constituent element in the body, poison, potion, a mineral or metallic salt. In a sense, all these meanings are comprehended in the classical use of this expression. Mercury is called *rasa*, because it can liquefy all other metals (*rasa-nāt sarva-dhātūnām*), it can enhance the potency of any metal, and it can banish all ailments, prevent old age and prolong life.

(jarā-rug-mrtyu-nāśāya-rasyate) !

Regarded as the seed of Śiva (Hara-bīja), it occurs in five kinds common mercury (rasa), flawless but red in colour, treated mercury (rasendra, rasa-rāja, mahā-rasa), which is brown in colour and most often used as therapeutically efficient, flawless, coarse to touch, and clear to look at, dirt-laden mercury (sūta), yellow in colour and needing the 18 chemical treatments before it can be used in medicine, extremely fluid mercury (pārada, quick-silver), white in colour and needing the treatments before it can be combined with other drugs, and mixed mercury (miśraka) with variegated colours like the peacock's tail

Impure mercury, when used internally, can be dangerous and even fatal. The chemical treatments employed to purify mercury and render it therapeutically efficient are 18 in number (svedāna, mardana, murchhana, uttāpana, pātana, bodhana, niyamana, dīpana, anuvāsana, gaganādi-grāsa, garbhadruti, bāhya-druti, jārana, rañjana, sārana, kramana, vedha and bhakshana), and involve a variety of apparatus (yantras, like dolā-yantra, ūrdhva-pātana-yantra, vālūkāyantra, bhūdhara-yantra and svedana-yantra)

Mercury is regarded as composed of all the five elements, for it is heavy (with atomic weight of 200 and relative density being 13059, symbolising prthivī), fluid in normal temperature (āp), shining like molten gold (tejas), quick-moving (vāyu), and becomes invisible when heated (ākāśa). It has all the six tastes, and can set right the disorders of the three doshas, and is described as conductor of all (yoga-vāhi). Treatment of mercury is directed towards purification as well as making it therapeutically effective. According to texts, when mercury 'swoons' (murchchhita viz, loses its fluidity) it can counteract all disease-conditions, when it is 'bound' (baddha, viz, assumes a gem-like shape), it produces miraculous powers, and

when it is 'killed' (mrta, viz calcinated) it can prolong life indefinitely. Mercury in its normal condition is regarded as Brahmā, when it is bound it is likened to Vishnu, and when it is 'killed' it is Śiva.

Usually four mercurial preparations are employed in medicine, black sulphide of mercury (krshna-bhasma or rasa-parpatī), the white perchloride of mercury (rasa-karpūra), the red mercurous chloride or calomel (rasa-sindhūra), and the yellow-preparation (pīta-bhasma). The most frequently employed is the red preparation.

The well-known rasa-medicines are Agni-kumāra (with mercury, sulphur, borax, opium, reduced iron and mica along with some herbs), Amṛta-kalpa (includes mercury, sulphur, borax, and Aconitum ferox), Ānanda-bhairava (includes purified cinna-bar, borax and Aconitum ferox), Chandeśvara (contains mercury, sulphur, Aconitum ferox, white arsenic and reduced copper), Chandrodaya-makaradhvaja (contains red sulphide of mercury and reduced gold), Jaya-mangalā (contains mercury, purified sulphur, fried borax, reduced copper, tin, iron pyrites, silver and iron, and prepared gold), and Vasanta-kusumākara (contains gold, silver, tin, lead, iron, mica, coral and pearl all reduced).

This school makes extensive use of inorganic *materia medica*. Besides mercury, several metallic ores (upa-rasas), metals (dhātu), mineral salts (lavana), and precious stones are used. Among metallic ores sulphur (gandhaka), mica (abhraka), iron-pyrites (svarna-makshika and tāra-makshika), orpiment (haritāla), realgar (manah-śilā), cinna-bar (hingula), bitumen with iron content (śilājīṭ) and borax (tankana) are frequently used. The metals used include iron (lauha), gold (suvarna), silver (tāra), copper (tāmra), sulphate of copper (tuttha), tin (vanga), zinc (yaśada), lead (śisaka), and sulphide of lead (or galena, añjanā). Alkaline ashes (kshāra), limes

(śankha-bhasma), arsenics (śankha-visha) and red ochre (rakta-pāshāna, gairika) are also widely employed

The rasa-medicines take several forms like oxides (bhasma), rasāyana, and pills (mātrā), rust or dross of iron (mandūra) is commonly used as tonic. Most of the medicines are used for purposes of rejuvenation, restoration and virilification

There are several manuals which deal with this system of medicine, many of which, however, are unpublished. Besides well-known works like *Rasendra-mangala* (Nāgārjuna), *Rasa-ratnākara* (Nityanātha), *Rasa-ratna-samuchchaya* (Vāgbhata), and *Rasendra-sāra-samgraha*, there are *Rasādhyāya* (Kankālaya), *Rasāyana-prakarana* (Merutuṅga, 1387), *Rasachintāmaṇi* (Ananta-deva), *Rasa-kaumudī* (Mādhava), *Rasālankāra* (Rāmeśvara), *Rasāmṛta* (Vaidyendra), *Rasa-ratna-pradīpa* (Rāma-rāja), *Rasa-rāja-Śiromaṇi* (Paraśu-rāma), *Rasa-rajā-lakṣmī* (Rāmeśvara), *Rasāvatāra* (Maṇikya-chandra) and other works on specific matters like *Abhṛaka-kalpa*, *Haritāla-kalpa* and *Loha-paddhati*

Rasa-prakāśa-sudhākara This is a comprehensive work on metals and mercury, written by YAŚODHARA from Junāgadh (about A.D. 1300). Opium and ambar (agni-jāra) have been mentioned. Essentially a work on rasa-chemistry, but includes alchemic details also [See ALCHEMY]

Rasa-ratnākara This is a voluminous work, ascribed to NITYA-NĀTHA-SIDDHA, in five books (khandas), dealing with metallic preparations, especially mercury, for medicinal purposes

The author claims to have consulted numerous works on the subject (*rasa-śāstra*) including the *samhitās*, *āgamas* and *tantras* and to have rejected everything from them excepting the really essential (tat sarvam

parityajya sārabhūtam samuddrtam). He further claims that whatever is to be found in other works can be found here, while what is to be found here cannot be found elsewhere (yad anyatra tad atrāsti, yad atrāsti na tat kvachit). The work is indeed a comprehensive one, and has been regarded as a source-book in the field

Of the five books, the first three deal directly and extensively with medicine (*Rasa-khanda*, *Rasendra*, *vādi*), diseases and the metallic preparations indicated in them, also details like purification of metals, calcification and so on. The last two (*Rasāyana* and *Mantra*) are more concerned with alchemic, occult and spiritual matters

The date of the work cannot be readily ascertained, however, it is later than *Rasār-nava* (13th century), which it cites [See RASA SCHOOL OF MEDICINE]

Rasendra-chūḍāmaṇi A work ascribed to SOMADEVA (12-13th century), it is a comprehensive work dealing with mercury, metals and precious stones, their purification, preparation of medicinal drugs from them, laboratory techniques and implements, terminology, and the 18 classical treatments (samskāras) of mercury [See RASA SCHOOL OF MEDICINE]

Rasendra-mangala Reputed to be a work of NĀGĀRJUNA, and to be the first work in the Rasa school of Medicine, it is also called *Rasa-ratnākara*. A later work of the same name (by SIDDHA-NITYANĀTHA) recognizes this work as Nāgārjuna's (proktam Nāgārjunena yat). The work is in the nature of a conference between the King Śāhivāhana, the sage Nāgārjuna and the sprite Vata-yakṣhinī, and two disciples Ratna-ghoṣa and Māndavya

It is obviously a work of Buddhist Tantra persuasion, and contains numerous Mahāyāna ideas, especially magical conceptions

Although the book is claimed to be

medical in intent ("vyādhītānām hitārthāya," NITYANĀTHA), it is alchemic in content, and deals with the 18 treatments (saṁskāra), mercurial and metallic preparations, and chemical processes (ed, Jīvarām Kālidās, Gondāl, 1924) [See NĀGĀRJUNA, ALCHEMY]

Rāvaṇa: He is the author of *Arka-prakāśa*, a work on tinctures and extracts 'Arka' is the Sanskritized form of the Persian 'Arruck' meaning "essence" It is one of the five medicinal preparations (*dravyakalpa*), the other four being *kalka* (paste), *chūrṇa* (powder), *rasa* (expressed juice) and *taila* (oil)

The work, although ascribed to the legendary demon-king of Lankā, whom Rāma killed, and although written in the form of a dialogue between the demon-king and his wife Mandodarī, it is clearly a work of the 16th century It deals with opium and prescribes a preparation of mercury with śankha-drāvaka for curing syphilis (phiranga roga), brought to India by the Portuguese The work mentions zinc (yaśada)

There are other works ascribed to Rāvaṇa like *Kumāra-tantra* (incomplete poetical work in 201 verses, dealing with metals and their calcination), and *Nāḍi-parīkṣhā* (a short work in 96 verses giving the details of pulse-examination) These works also are of late origin, probably 16th century

Rgveda Medicine: One of the classical Vedic triad (trayī, comprising *Rgveda*, *Yajurveda* and *Sāmaveda*), *Rgveda-Saṁhitā* is the only primary collection, the other two being mainly derived from it Extant in the Śākala-recension, it is a huge mass of 1,028 hymns (sūktas) arranged in ten books (maṇḍalas) according to subjectmatter and the poet-composers The general tenor of the Rgvedic collection is descriptive and laudatory, but there are interesting philosophical speculations and charming literary flourishes

ishes

Rgveda is the earliest literary record of Indian culture, and it provides the common background for art, science, literature, philosophy and craft that developed in the country during the subsequent centuries It contains a fairly elaborate account of the condition of medicine that prevailed in those days (about 7000 B C) It would appear that the theoretical foundations (the notions of dhātu, dosha, pañcha-bhūta, herbal medicine, nature cure, etc), were laid even then, the essential medical practice (administration of herbal drugs, surgical operations, cure of skin ailments by sunbath, hydrotherapy, etc) was also current

Physicians (bhīṣak) belonged to a professional class A hymn speaks of a hundred physicians and a thousand medicaments (1,24,9) The pharmacopoeia consisted mainly of herbs (ośadhī) The importance of medicinal plants (10,97,6), classification of such plants according to their therapeutic properties (10,97,110), and the collection of herbs (10,145,1) are mentioned (cf also 10,19,22, 10,90,4, 10,97,4)

The Aśvins, the reputed physicians of gods, are described as custodians of herbs (10,97,110), and their skill is extensively praised (1,116,10, 1,117,13, 1,117,17, 1,112,14, etc) [See AŚVINS] Among their achievements were the fitting of iron thighs (āyasīm janghām) to Viśpalā (wife of Khela, or a mare?) who had lost her legs in a battle (or in a race?) [1,116,15], rejuvenating the sage Chyavana who was abandoned by his people because he had grown old and infirm [1,117,13 and 5,74,5] *Satapatha-brāhmaṇa* 4,1,5 gives the story (ākhyāna) about restoration of vision to Rjṛāśva who had become blind (1,116)

They also assisted the Vedic hero Divodāsa in his encounter with the tribal chieftain Śambara (1,112,14) This Divodāsa was a physician, along with Bhṛadvāja, in the RV Indra's skill as a healer is also referred

to (2,23,7, 2,15,7 , 8 91,7 etc) [See INDRA]

Some of the gods are also healers Sūrya the solar divinity and the father of the Aśvins, dispels diseases (1,35 9 and 1,50,11), kills the bodily parasites (1,191 8) and eliminates the effect of poison (1,191 9 cf the solar disc of Indra destroying parasites AV, 2 31 1) He aids bodily secretions which contribute to activity, cheer and strength (2 38 2) Agni, the god of Fire, confers on humans long life and strength (1 12,7, 1,94 16 and 4 12 6) and prepares medicaments (6,106 3) His role as a physician is referred to in AV also (1 28,1) Varuna the water divinity, is the lord of a thousand drugs (1,24 9) Soma, the herb, is hailed for its numerous benefits like protecting the body removing the ailments lifting depression, stirring good thoughts and conferring strength and cheer (6 69,7 9 2,10, 8,48), the entire ninth book is devoted to Soma Soma is regarded as the typical medicinal plant also in *Āitareya-brāhmaṇa* (3 40 Oshadho vai Somo) Vāstoshpati also delivers the humans from diseases

Rudra is likewise the 'best physician' he causes illness and cures them But his celebrity is more apparent in AV Fever (takman) and cough (kāṣikā) are in fact his weapons (*Kau su* , 11,2,22 and 26), sharp pains are due to him (ibid, 31,2) Likewise, fever, (takman) is in RV regarded as the 'son of Varuna' (1,25,3, 6,96,2), dropsy (jalodara) is a disease inflicted by Varuna (1,25,3, 1,10,1-4)

The value of water for preserving health and removing diseases was recognised (1,23,20, 10,137,6, 6,24,2 etc) Water contains medicine, it cures (3,12,9, 1,5,4, 3,7,5, 1,4,4) water confers deathlessness (1,25,16-24, 6,50,7, 10,9,5-7) AV also called it the sap of life (rasa, 3,13,5), and so does *Satapatha-brāhmaṇa* (3,3,3,18 raso vā āpah) Air (vāta) is also curative (1,27,3), it throws out the 'sins' from the body (10,137,2 cf also *Taittirīya-brāhmaṇa*

2,4,1 7) Along with water and air, sunshine is recommended for health (2,33,1, 1,161,14, where 'agni' represents the Sun)

The theory of five elements being the basic constituents of the physical body is suggested (10,16,3-6) An elementary anatomy is also found (10,163, 3,36 8, 8,1,23, 6,53 8) organs like the lungs, heart, stomach intestines, kidneys alimentary canals are referred to Several diseases like consumption, jaundice, heart-troubles and fevers are mentioned (10,97,105, 137,161,167, etc) Parasites (krmī) are recognized (1,191,1,16, 10 97,6) Difficult labour is also considered (10,172)

It is small wonder that there was a view that Āyurveda was affiliated to RV (Charana-vyūha, Rgvedasya upaveda Āyurvedah, also Nilakantha on *Mahābhārata* 2,11 44 and *Śukranītisāra* 4,77 yasmin Rgvedopavedah sa chāyurveda-samjñakah)

Rgyud-Bzi The most popular medical manual in Tibet and Mongolia, Rgyud-Bzi is meant to be the Tibetan rendering of a Sanskrit work of Indian origin, *Amṛta-ashtāṅga-guhyopadeśa* (lit Secret Teachings Concerning the Eight-fold Ambrosiac Healing) But the original has not survived, nor is there any reference to this work in subsequent medical writings Vairocana (c A D 780), the Tibetan disciple of PADMA-SAMBHAVA, is said to have come to India to study this text with CHANDRANANDANA (in Tibetan, Zla-ba-la dga-ba), to whom is ascribed a commentarial work *Vaidya-ashtāṅga-vṛtti*, on Vāgbhata, (cf Venkateshvara Press, Bombay, 1928, Attr with three comm)

The work is in four parts, each called a 'treatise' (tantra) foundational (mūla), expository (ākhyāta), practical instructions (upadeśa), and supplementary (uttara) It is in the nature of a dialogue between Rīg-pa'i Ye-Śes (the nirmāṇa-kāya of the Buddha as Sovereign Healer or bhaishajya-guru) and the sage Yid-las-skyes The work has 156

chapters, and contains altogether 5900 verses

There are several commentaries, the most important among them being *Legs-bsad-nor-bu* (in Skt *Subhāshita-ratna*) by BYANGSPA (14th cent) and *Vaidūrya-Sñon-po* by SDE-SANGS-RGYAS RGYA-MTSON (1635-1705) [See TIBETAN MEDICINE]

S

Śabda-chandrikā A medical glossary of vegetable and mineral substances, by CHAKRAPĀNI-DATTA (c A D 1060) The work is in nine sections (vargas), dealing with trees, plants, metals like gold, and clarified butter, land, etc , human beings, animals, wines and liquors, five astringent juices (kashāya), and triphala, etc [See CHAKRAPĀNI-DATTA]

Sahadeva He is one of the Pāndava brethren, and renowned as a veterinary surgeon A work of his, *Vyādhu-sindhu-vimardana* has been mentioned (*Brahma-vaivarta-purāna*, Brahma-khanda, ch 16), but is now lost

He is celebrated as an expert in curing the diseases of cattle

Śālagrāma-Nighaṇṭu A modern and useful *materia medica* compiled by LĀLĀ ŚĀLAGRĀM in 1896, to constitute the 7th and 8th chapters of *Brhan-nighantu-ratnākara* [See BRHAN-NIGHANTU-RATNĀKARA]

Śālagrāma-Nighaṇṭu-Bhūshana A pharmacological compendium prepared by Lālā

Śālagrāma-Vaiśya of Moradabad in A D 1896 (vol 7 and 8 of *Brhan-nighantu-ratnākara*, Khemraj Srikrishnadas, Bombay 1953)

The work is in two parts, the first containing 23 sections (arranged in terms of drugs, fruits, flowers, trees, metals, poisons, vegetables, drinks, milk and its products, oils, liquor, etc), and the second only two sections (kinds of soil and miscellaneous)

Although planned in the conventional style, the work includes many details of drugs of comparatively recent origin For instance, reference to *Papaya* (*Carica papaya*), which is a native of Mexico and West Indies islands and came to India only with the Europeans, is to be found only here, it is called 'eranda-chirbhata' in this work

Śālihotra A general name (Śālihotram, Śālihotriyam) for the veterinary science concerning horses The need to understand the nature and pedigree of horses, to manage them, care for them, and to cure their diseases was felt even during the Vedic times We have references to animal anatomy and ailments in the Vedic texts

But a full-fledged discipline seems to have emerged in later times, a few centuries prior to the Christian era However, the extant works on this subject are of still later origin, several centuries after the Christian era *Nīṭisāra* of Śukra is an important work, where this branch of knowledge is elaborately dealt with The treatment of diseases of horses has been the subject-matter of several manuals, e g , Garga's (*Gana's Asvāyurveda* (Nepal, 765), Nakula's *Asva-chikitsā*, Simha-datta's *Asva-sāstra-samudra*, Bhoja's *Vāji-chikitsā*, Jinadatta-sūri's *Asva-vaidyaka*, and Dipamkara's *Asva-vaidya-sāstra*

The earliest and most comprehensive treatise on the subject was composed by ŚĀLIHOTRA of uncertain date He is said to have been born in Śālātura in Gandhāra

(the present day Kandahār), which has always been celebrated for the excellent quality of the horses bred there. His father, HAYAGHOSHA, was also an expert on horses (turangama śāstra). Śālihotra is said to have learnt this art of therapeutics concerning horses from Brahmā himself, and to have written a *Samhitā* comprising this knowledge, at the instance of Indra (cf. Nakula's *Asva-chikitsā*).

This work was composed in his own hermitage in the Champaka forest (in Magadha), on the right banks of the river Jānhavī. The work was initially known as *Turanga-chikitsitam* or *Hayāyurveda* although it became famous as *Śālihotram* or *Śālihotriya-samhitā*. The work mentions that Suśruta, learned in the Vedic lore, approached his father (pitaram) Śālihotra, the great sage, and requested him to give an account of the treatment of the diseases of horses (turanganam chikitsitam). *Agni-purāna* also refers to Śālihotra having taught 'hayāyurveda' to Suśruta (2, 92). This Suśruta is obviously different from the author or the first redactor of the celebrated *Suśruta-samhitā*.

The work is said to have consisted of 12,000 verses in eight books (sthānas). But the first book alone is available now. However, this portion contains a detailed statement of the topics dealt with in all the eight books. The chapters are entitled Unnaya (origin, pregnancy, examination of parts, signs and characters), Uttara (diseases of horses), Śārīraka (anatomy, physiology, embryology and diseases), Chikitsitam (treatment of the colts or young ones), Uttarottara (construction of stables, rituals, pacification of evil spirits, the nīrājanā rite, worship of Revanta and Lakshmi), Siddhi (treatment of diseases), and Rahasya (duration of life, signs of death, astrological considerations, preparations and prescriptions for long life, rejuvenation, virilification, training, management, and charms).

The eight-fold character of the Indian medicine has been sought to be involved here (hayāyurveda-ashtāṅgah). But the treatment of the subject, if we can infer from the content that is available, has not been very methodical. Diseases and treatments occur indiscriminately almost in every book.

Some specific ailments, like inability to drink fluids (sarda), prolapse of rectum (guda-bhramśa), facial paralysis (valardita), lameness (lingitāni), running from nose (singhānaka), sores within nostrils (ghrñi), swollen palate (avalukiravantaki), and nervous distress (vyānaka) are mentioned, probably they were described in detail.

Drugs recommended in the treatment include chebulic myrobalan (haritakī), *Allium sativum* (rasana), *Balsamodendron mukul* (guggulu), triphala, lac (lākshā) and resin (sarjikā). Extraction of foreign bodies, management of difficult labour, treatment of wounds and application of enemata also figure.

The supplementary section (Uttara-sthāna) is entirely magical and cultic. The next section (Siddhi-sthāna) deals with the diseases caused by the excessive use of oleogenous articles of diet, milk, wine, rice and articles like salt in food.

The available text (India Office Ms 2762) has been reproduced in *GnM*, *HIM*, vol II, pp 367-372. This contains only the first book. The Mss mentioned in *Triennial Catalogue* [Madras R. No 2342] contains besides chapters 1 to 9 of the first book, chapters 1 to 18 of the last book. Aufrecht discovered a copy of *Śālihotra* in the East India Company library.

The work was translated into Persian during the reign of Ghīyāsuddīn (Kubrat-ul-Mulk, A.D. 1381), into Tibetan (included in Tan-gyur) and into Arabic (mentioned by Hajī Chalfā). The Persian translation is preserved in the Royal Library of Lucknow.

This work was abridged by King Indusena

in 1812 under the title *Sāra-saṃgraha*

Śaraloma He is an ancient physician quoted by Charaka as being a contemporary of Ātreya (CS *Sū sūh*, ch 25 Yajjah-purushīyam, 10 and 11)

In an assembly of sages in the presence of Ātreya, Vāmaka, the King of Kāśī, poses the problem of the origin of man (yajjah) and the source of disease (yajjah tasya āmayāh) On Ātreya asking the assembled sages to discuss, MAUDGALYA offered the view that soul (ātmā) being the origin of man, it was also the source of diseases (rogāś chātma-jāh, kāranam hi sah) Diseases are occasioned by the *karma* and are meant to work it out

Śaraloma opposes this view Soul is the constituent of consciousness ("chetanā-dhātuh," *Chkp*) in a being, and as such it is averse to stress or misery (*duhkha-dveshī*) It is improbable that it would bring upon itself misery (disease) of its own accord It is mind, being ridden by excessive activity and ignorance, although its essential nature is that of cognition and quiet (*rajas tamobhyām tu manah parītam sattva-saṃjñakam*), that originates the physiological constitution, and therefore it is mind that brings about ailments also (*vikārānām cha kāranam*)

He was the earliest thinker who suggested the psychosomatic idea of diseases

Śārngadhara. He is the author of a popular medical compendium (*Samhitā*) He is regarded as the same as the author of the well-known literary anthology, *Śārngadhara-Paddhati* The latter was the son of DĀMODARA, and grandson of RĀGHAVA-DEVA, who was minister to the Chāhuvana king Hammīra of Sākambharī-deśa (Sambhal), who ruled between A D 1283 and 1301 The date of the anthology is given as A D 1363 But the medical compendium has a commentary dated c A D 1300 It must, there-

fore, have been composed much earlier, and by a different author [See ŚĀRNGADHARA-SAMHITĀ]

Śārngadhara-saṃhitā This is a "short but solid text-book" (Jolly) of medical information and formulae, much relied upon by later physicians Its composition is assigned to A D 1226 Little is known about the author

The text-book is in three parts (*khandas prathama, madhyama and uttara*) and 32 chapters (*adhyāya*) (7 in I, 12 in II, and 13 in III) There is a total of 2,600 verses

Part I deals with terminology (*paribhāṣhā*), weights and measures (*māna*), time for taking medicine, pulse-examination (*nāḍī-parīkshā*), carminatives and stomachics, anatomy and physiology, the manner in which food is digested and assimilated in the body (*āhāragatī*), and enumeration of well-known diseases (*rogā-nām ganānā*)

Part II deals with the preparation of medicines straight from plants (*svarasa*), decoctions (*kvātha*), hot infusions (*phānta*), cold infusions (*hima*), pastes (*kalka*), powders (*chūrna*), pills (*gutikā*), lehya, electuaries, medicinal liquors (*sandhāna*), medicated ghees (*ghrta*) and oils (*taila*), oxides (*bhasma*) of gold and other metals, purification of metals (*dhātu-śuddhi*) and preparation of mercurial medicines (like *Vasanta-Kusumākara*)

Part III details with curative procedures like oleation (*snehapāna*), sudation (*sveda-na*), emesis (*vamana*), purgation (*virechana*), enema therapy (*basti*), errhine therapy (*nasya*), smoking (*dhūma-pāna*), gargling (*gandūsha*), plaster (*lepa*), blood-letting (*śonita-visrutī*), and treatment of eye-diseases

The prescriptions are collected from numerous earlier medical works (like CS, SS, MN, SY and *Chakra-dattam*), but diseases are more elaborately dealt with

The use of pulse-examination (nāḍi-parīkshā) in diagnosis appears here for the first time in medical literature. Drugs of foreign origin like opium (aliphena) and ākārakrabha are mentioned. This is the oldest work in which calcination and similar metallurgical techniques are dealt with.

The work is frequently quoted in *BP*. There are some commentaries on it, e.g. by Vopadeva (c. A.D. 1300) a well-known grammarian and physician patronized by Hemādri (1260-1309) in Devagiri (modern Daulatabad, Aurangabad district, Maharashtra), by Ādhamalla (*Dīpikā*) son of the physician Chakrapāṇi Śrīvāstavya of Mīrpur, and by Kāśīrāma (*Gūdhārtha-dīpikā*), who was patronized by Shāh Salīm, son of the Mughal monarch, Akbar.

Sarvāṅga sundara a commentary on *AHr* by Aruna-Datta (Ed. Vijaya-ratna Sen-Gupta, Calcutta 1888, Annā Moreśhwar Kunte, Bombay 1889 along with word-index). Probably the work was written c. A.D. 1200 (*Sarvāṅga-sundarī*, according to Aufrecht's MSs and *Sarvāṅga-sundara* according to Hari-Śāstri Parādkar's MSs).

The commentary begins with a prayer addressed to Padmanābha, and seeks to illumine the letter as well as spirit of text (*samyag-drashtuh padārtha-bodhāya*, prefatory v. 3). It is indeed an elaborate commentary, and is of immense help in understanding *AHr*. The style is lucid and engaging.

Among the medical authorities cited in this work are, besides Charaka (who is described as 'muni') and Susruta, Agnivesa, Ātreya, Kshārāpāṇi, Kāsyapa, Kharanāda, Jatūkarna, Bhattāra-Harichandra, Drdhabala and Īrīta. The commentary refers to *AS* as 'Vṛddha-Vāgbhata' (e.g., *Utt. Sth.* 36, 29 and 33) in the sense of the earlier and more elaborate work. (See ARUNA-DATTA)

Śāśilekhā This is the only commentary that is available on Vāgbhata's *Aśtāṅga-*

Samgraha (ed. T. Rudra Parasāva, Trichūr, Kerala, 1926). The author is INDU (or Indukara) said to be a student of Vāgbhata.

Vāgbhata is mentioned in this work as Bāhata, a Prākṛit form that became popular in the South. The commentary claims that Bāhata is hard to understand, that dark is the import of his words, and that the commentary which is like the moonlight shining like a white conch (svaccha-sankha-sphuta-saśikalā) makes him lucid with words full of meaning. Hence the title "Moon's digit" (śaśi-lekhā), a reference to the author's own name Indu (meaning Moon). The commentary is quoted by Hemādri [See VĀGBHATA, AŚTĀṅGA-SAMGRAHA].

Saunaka He is an ancient sage mentioned by Charaka as having participated in the discussion on the causation of diseases (*CS*, *Sū. Sth.* Ch. 25, Yajñah puruṣhīyam, 26 and 27). He speaks after Kauśika who says that diseases are caused by the six constituent factors (five material elements, earth, etc., and consciousness, chetanā), even as the human constitution is.

Śaunaka argues that this would be insufficient explanation because the constituent factors by themselves do not explain the emergence of an offspring. It is heredity (parents) that is responsible for diseases, as e.g. diabetes (pitryā mehādayas choktā rogās tāv atra kāranam), as also for the individual. This is the earliest reference to the diseases that are transmitted through heredity.

Saunaka, being a family name, is borne by many ancient authors, including some medical writers. The views of the latter are quoted in manuals like *NS* and *VyKu*, but their works are no longer extant, and their identity is uncertain.

Siddha-mantra A brief pharmacological work prepared by the physician KEŚAVA,

son of MAHĀDEVA, father of the celebrated VOPADEVĀ (See under V), and disciple of BHĀSKARA, father of SODHALA, (See *S-nighantu*) He was a resident of Vedapada on the banks of the river Varadā in the Dandaka region. He was a physician to SINGHANĀ, the Yādava ruler of Devagiri (A D 1200-1247)

The work is so called because, as the author claims, by just repeating the recipes given here which are like well-tried *mantras*, the proper line of treatment would flash forth (*sphurati bhesajam*) in the mind of the physician. The work is brief in order that the physician may quickly and easily understand the principle of drugs and their qualities (*sukhena drāg dravya-śakti-tattvam vidantv iti*)

The work begins by propounding the fundamental principles of treatment in nine verses. The main text contains details of drugs in eight sections. The arrangement of drugs is in accordance with their effect in counteracting the doshas *vāta*, *pitta*, *kapha*, *vāta-pitta*, *kapha-vāta*, *kapha-pitta*, dosha in general, and excess of doshas. It is interesting that the author has suggested a 'neutral' (*udāsīna*) group of drugs for each of the three doshas. The *vāta-udāsīna* drug, for instance, would neither aggravate the *vāta-dosha* nor counteract it. The quality, taste, potency, etc., of drug have been given in the context of the doshas.

There is a gloss on this work, entitled *Pra-kāśa*, by the author's son Vopadeva (See V) (cf P V Sarma, JRIM, 1971, 6,3)

Siddha system of medicine The use of metals, minerals and particularly mercury in medicine is an ancient practice in India. And this was a part of the Tāntric legacy inherited by Āyurveda. This legacy is conspicuous in the so-called Siddha System of medicine which is now prevalent mostly in South India especially in Tamil Nadu.

An old system, dating back to pre-

Āyurveda period and strongly Tāntric in orientation, it got mixed up with the cult of the nine million Siddhas (*nava-koti-siddhas*) Siddhas, 'who defied death', preached a philosophy of transmuting the gross physical body composed of impure matter (*asuddhamaya*) to the refined body of naturally pure matter, thereby rendering the body immutable and free from disabilities and limitations (*pranava-tanu* or *bandava-tanu*) 'Liberated while alive' (*jīvanmukta*), the person who is possessed of this refined body, transacts freely with the world of impure matter as well as the world of pure matter, he is distinguished by the skills (*siddhis*) that facilitate these transactions.

The eighteen Siddhas (Sittars) in the Tamil tradition are as follows: Agastya (Agattiyar), Tirumūlar, Bogar, Gorakkar (Gorakshanātha), Sattai-muni, Nandisar, Konkonar, Kamala-muni, Idaikkādar, Sundarāndar, Roma-muni, Brahma-muni, Maccha-muni (Matsyendra?), Varāhamuni, Kūrma-muni, Punnakkisar, Kailāsanāthar and Kunkannar (cf A V Subramania Aiyar, *The Poetry and Philosophy of the Tamil Siddhas*, 1957, p. 72 fn). It is, however, doubtful if all these were historical personages.

In the classical list of Siddhas, two are of especial importance to the Tamil Siddha system. Bogar, supposed to be a pre-Christian Taoist Chinese, came to India and settled down on the Pazhani Hills in Tamilnadu. He has left not only his works on alchemy and medicine in the Tamil language but a tradition of what is known as the 'pure path' (*śuddha-mārga*), respected alike by the adherents of Śaivāmnāya and Śāktāmnāya.

Another Chinese who accompanied him and became an authority on medical alchemy here is known in Tamil as Pulippari. Besides these two, the name of Tirumūlar, whom tradition assigns to 3,000 B C (?) is associated with the founding of

the Siddha school

Agastya, an Āryan sage who came down from the Himālayan region and did his life's work in South India, is also mentioned in connection with the early development of this school. He is said to have established a centre on the Siddhakūta-hill in the present day Tirunelveli district in Tamilnādu. An important Tamil work on which the Siddha-physicians rely is ascribed to this sage *Agattiyar-Charakkū*.

However, it is difficult to determine the origin or development of this remarkable system, especially because most of the Siddha-vaidyas in Tamil have not been critically studied, very few indeed have been even published. But there is no doubt that it was once a very prevalent system. Numerous medicines, rich in mineral content, especially mercurial preparations and in extensive use today among the rural folk in the South are to be traced to this system.

The employment of mercury and arsenic as medicinal agents, extractions from minerals, preparation of essences, calcination, and the use of animal products with healing properties distinguish the Siddha practitioners. There is considerable impact of Āyurveda on the Siddha medical thought as we find it today. But this was a later development.

Of special interest in the Siddha system is the role of *muppu*, a preparation peculiar to Tamil alchemy, in making mercury pills of exceedingly high potency intended to prolong life. The exact significance of the Tamil expression, *muppu*, is rather obscure, but it is generally described as the Indian version of "the philosopher's stone". Its employment is twofold: transmutation of base metals to gold, and rejuvenation of the human system.

The *muppu* used in the Siddha system is known as the 'medicinal' one (*vaidyamuppu*). But another kind of *muppu* is employed in South Indian alchemy (*vādamuppu*). Two other kinds of *muppu* are

mentioned in Tamil literature which do not appear to be substances at all, they may be mere abstractions: *yoga-muppu* and *jñānamuppu*, meant to be used exclusively by spiritual aspirants.

However, it is possible that these two kinds of *muppu* were psychedelic drugs, effective not only in producing visions but in stimulating the psychic centres.

There is some knowledge available about the medicinal *muppu*: three ingredients go into the preparation of this mixture of sodium carbonates (*pūnīru*), rock salt (*kaluppu*), and calcium carbonate (*andak-kal*), which are obtained naturally. This is the substance that gives mercury its effective property, and, therefore, it is described as 'guru'.

Of the three ingredients mentioned above, important is the *pūnīru* (water exuded from earth). *Muppu* is effective in proportion to the quality of this *pūnīru*, which is a fluid, whitish in colour, an efflorescence from the soil. Although it is naturally got, its occurrence is restricted to certain places like Kālahastī, Tiruvalangādu, Vadamadurai, Śivagangai, Tenkāśī, Tīlavānām and Kanyākumārī.

The efflorescence, useful to a Siddha physician, is to be collected in the early hours of the morning at these places, for it is the result of the action of full moon on earth.

Tamilian alchemy works on the male-female (*ān-pen*) principle, in common with the alchemical thought in the rest of the country. The Siddha ideology looks upon the male-female symbolism in terms of *bindu-nāda* differentiation. *Pūnīru* is said to be the result of the union of male and female: full moon (male) acts on the earth (female) at some places in a peculiar way to produce this fluid. The collection is done in a ritualistic manner, and the preparation of *muppu* from it is even more heavily ritualistic.

There are numerous works in Tamil (like

Muppuvaippu, Muppuchunnam, Pannīr-kāṇḍam, Vālaisūtram, Pacchaivettu-sūtram, Amuda-kalaiyānam) describing the several methods of muppu-preparation (bhasmam, chendūram, chunnam), but the methods are preserved as closely guarded secrets. It is necessary that the works must be carefully studied before the role of muppu in South Indian alchemy can be fully understood.

The formulary of this system includes several kinds of 'chendūram' (which, although derived from the Āyurvedic *sindūram*, does not always contain mercury and sulphur, nor necessarily presuppose heating to obtain sublimes), confections (*lehyam, rasāyanam*), pills (*guligai, mātṭirai*), flavoured syrups (*manapāgu*), different preparations of waxy consistency (*mezhu-gu*), medicated ghees, oils and butter (*nei or ghrtam, enṇai or tailam, vennai*), several kinds of calx (*parapam, bhasmam*), distilled essences (*tīnīr*) and other preparations (*karpam, kalpa*).

The materials used are of vegetable origin as well as metals and minerals. Drugs in powder form (*chūnam*) are mostly herbal, but the powders involving calcination (known as *karuppu*) contain sulphur and mercury. The coarse powders used for decoctions (*Kudinīr*) are again herbal, as also the lixatures (*lehyam*). The pills, especially the so-called *bhairavams*, may contain purified metals, minerals, and poisonous organic drugs. Sulphur, mercury, cinnabar, yellow and red orpiments, lode-stone, iron-filings, calx of mica, silver, pearls, corals, copper-pyrites, calomel, borax, aconite, opium, hemp, and biles of goat and buffalo are among the ingredients.

Nine kinds of salts (*uppu*), corrosive sublimes, camphor, calomel, arsenic, calx of copper-pyrites, vitriol, mercury, sulphur and cinnabar, enter into the preparation of *mezhu-gu* along with various vegetable drugs. Medicated ghees are herbal and oils

are mostly herbal, although salts, calomel, borax, orpiments, musk and even mercury and sulphur are sometimes added.

The Siddha formulary is extensive, and it utilizes not only the resinous exudates, rhizomes, dried stigma (saffron), wood-barks, leaves, roots and flowers of a wide variety of plants and trees, but also animal secretions (like civet and musk), shells and bones of aquatic animals like cuttle-fish bone (*samudraphena*), conch-shell (*śankha*), and oyster-shells (*mauktika*), horns of deer (*śṛṅga*), and flesh of animals.

Frequently used are, besides mercury, sulphur and cinnabar, gold, silver, zinc (*jasada*), lead (*nāga*), tin (*vanga*), mica (*abhraka*), red-oxide of lead (*giri-sindūra*), red orpiment (*manahśilā*), yellow orpiment (*haritāla*), copper-sulphate (*mayura-tutta*), alum (*sphatika*), borax (*tankana*), calomel (*rasa-karpūra*, mercurous chloride), bees' wax (*madhūcchishta*) and asbestos (*kalnāru*). Poisons like white arsenic (*śankha-visha*) and arsenic penta sulphide (*gaurī-pāshāna*) are also commonly included in the Siddha recipes.

This system successfully integrated the therapeutic aspects of the Rasa school with the herbal approach (*kāshtha-aushadha*) of Āyurveda. Its formulae are reputed to be remarkably effective. There is need to translate these works in Tamil concerning this system into English, so that the world may appreciate its contributions. [See THE RASA SCHOOL OF MEDICINE]

Siddha-yoga A standard work on chemico-medical formulary, prepared by VRNDA or VRNDA-KUNDA (9th cent.), this is a comprehensive treatise in 82 sections (*adhikāras*), dealing with numerous diseases from fever to poisoning, and with elixirs and aphrodisiacs. There are accounts of the five-fold treatment procedures (*brmhana, svedana, etc.*). A section on fatal signs (*arishtha*) is also included. The work recommends

health-giving conduct (*sad-vṛtta*) and hygienic measures. The last section miscellaneous in content, deals with the 'four-limbs' of treatment (physician, patient, medicine and nurse), weights and measures and technical terms.

The work draws heavily on *CS*, *SS* and *AHr* and appears to be modelled after *Chikitsā kalikā*. The enumeration of diseases follows *MN* but greater emphasis is given to curative aspects. There are many formulae included here from his own practice and experience (*siddha-yoga*). Employment of metallic compounds in their medicinal preparations figures prominently. The methods for 'killing' iron, preparing sulphides of copper and mercury are given. Numerous rejuvenants and elixirs are prescribed.

Chkp has incorporated many formulae from this work in his own *Chikitsā-sāra-samgraha*.

It has a commentary known as *Kusumāvalī*, begun by Śrīkantha-datta (14th century) and completed by Nārāyaṇa (ed. along with *Siddhayoga*), Pune 1894 [See *VRNDA*].

Śivadāsa-sena He is the author of a commentary on *Chkp*, especially on *Chikitsā-samgraha* (Chakra-datta), entitled *Charaka-tattva-pradīpikā* and on *Dravya-guna-samgraha*. He also wrote a commentary on *AHr*, called *Tattva-bodha*.

He belonged to Bengal, and hailed from the village Malañchika (Pāvanā district, Bīrbhūm). Son of Ananta-sena, a court physician of Barbak-Shāh, a chieftain of Gauda (1457-1474), he was patronized by this chieftain.

Siva-kosha Called *Nānārthaushadhi-kosha* by the author ŚIVA-DATTA-MISRA of the Karpūriya clan, son of Chaturbhuja-misra, a physician, this work has become celebrated as *Śiva-kosha*, after the author. It is a pharmacological work in 540 verses, giving

synonyms of drugs in alphabetical order. The work was completed in A D 1677 (Śaka 1599).

The author has himself written a commentary on this work, entitled *Śiva-prakāśa*, after consulting the works of Vāgbhata, commentaries on them, and several pharmacological works. He has relied especially on *AHr*.

The author's son, KRSHNA-DATTA-MISRA, was also a medical writer [See *DRAVYA-DIPIKĀ*].

Sodhala-nighantu A valuable pharmacological lexicon, prepared by SODHALA of Vatsa-gotra of the Rāyakavāla family, son of the physician Bhāskara who was a follower of Vāgbhata, and father of the celebrated Śārngadeva, author of *Sangīta-ratnākara*. Besides medicine Sodhala was an expert in literature, grammar and astrology, he was also a poet. Another work on medicine, *Gada-nigraha*, has been ascribed to his authorship. He probably lived during the 12th century.

The work, called in the text *Nighantu-sāra-sarvasva* follows, on the author's own admission, *Dhanvantari-nighantu* ('Dhanvantari-matodddhrte'). The first six characteristics (*lākshana*), and the eighth deals with various articles of food with medicinal properties: drinks, milk, butter, butter-milk, ghee, oils, sugar-cane, honey, liquors, urine, etc. The last subsection (27th) is miscellaneous (*miśrakādhyāya*). At the end is given details of drugs like taste, potency etc., following *AHr*.

The work refers to mercury (*pārada*) and the processes to make it effective. But there is no mention of zinc (*yaśada*) among metals, nor of opium, bhang and Ākarakara.

Śrīkanṭha-datta He is the author of *Madhu-Kosha* (along with VIJAYA-RAKSHITA) a commentary on *MN*, from the section on urinary disorders (*prameha*, 33) till the end.

It is a work of the 13th century

Son of Nārāyaṇa, he studied medicine under Vijaya-Rakṣita, and completed the commentary that his teacher had begun on MN and left unfinished at the end of the section on calculus (*aśmarī*, 32). He has two verses before the commentary on the section 33, wherein he tells us that his commentary was motivated by his reverence for the teacher Vijaya (*Śrīkantha-datta-bhishajā guru-bhakti-leśād-ārabhyate*)

At the close of the commentary he refers to his teacher's work, *Sūkti-muktāvalī* (which probably is another name for *Madhu-Kośa*), in which whatever was left unarticulated by his teacher (*gurunā yan na gumphitam*) has been supplied by himself in the very words of his teacher (*mayā samas-tam agranthi tad girā śuddhi-yuktayā*)

He also wrote a learned commentary on SY [See MADHU-KOŚA AND VIJAYA-RAKSHITA]

Suśruta Author or first redactor of the well-known book on surgery, *Suśruta-Samhitā*, he is said to have learnt the art and science of surgery from Dhanvantari (-Divodāsa) in the Himālayan retreat, along with other sages (Aupadhenava, Vaitarana, Aurabhra, Paushkalāvata, Karavīrya and Gopura-rakṣita) (SS, 1, 1 and 5, 2). The author of SS refers to Śusruta in the third person, and describes him as the worthy son of Viśvāmitra (*Viśvāmitra-sutah śrīmān Suśrutah*) (SS, Utt Sth 66, also Chik Sth, 2)

It is difficult to identify who this Viśvāmitra was, for Viśvāmitra is a family name. The original Viśvāmitra (the gotra originator), is a RgVedic sage, the author of the celebrated gāyatrī hymn. He is described as the son of Kuśika (or Gādhi), the King of Kānyakubja, and as the family priest of the King Sudāsa. There is a Viśvāmitra, a descendant of his, who was a physician and whom Nis, VyK, VyMk and BP quote. Suśruta was probably the son of this Viśvāmit-

ra

There seems to have been a Suśruta in ancient times, probably a contemporary of Agniveśa, and long before the redaction of the present SS. He is referred to as Vṛddha-Suśruta, and is described as the author of a medical work (*tantra*) Nis, VyMk, BP, *Todarānanda* and *Tattva-chandrikā* quote from this work (*Sauśruta-tantra*). The expression 'Sauśruta' here is explained as 'taught by Suśruta' in the *Vārttika* of Kātyāyana, 4th century B C. Perhaps it is this ancient Suśruta, who is saluted in the beginning of SS along with the ancient teachers of medicine in succession (*namo Brahma-Prajāpaty-śvīnā-Balabhid-Dhanvantari-Suśruta-prabhṛtibhyah*). It may be noticed that *Bower MSs (Nāvanīta-ka)* refers to Suśruta as a sage (*rshi*), while it does not mention Charaka at all.

It may be presumed that the original *Samhitā* according to Dhanvantari-Divodāsa's teachings was the work of this elder Suśrutā, who may have lived before or around B C 600 (as Hoernle supposed), or even about B C 1000 (as G N Mukhopadhyaya held). The work was probably recast at a later date, in the early century of the Christian era.

There is a Suśruta who is referred to as the court-physician of Kanishka (whose date is variously given between A D 78 and 144) and another in the court of Yaśovarman of Kānyakubja (A D 899-910). It may be the former who gave SS the present shape [See SUŚRUTA-SAMHITĀ]

Suśruta-Samhitā A work comprehending the surgical tradition of Indian medicine, ascribed to the sage Suśruta, the original of which may have been composed around 600 B C (Hoernle) or before 1000 B C (G N Mukhopadhyaya). It was one of the four treatises regarded as the source-books for the branch of surgery and for all the later surgical works in India (*seshānām śālya-*

tantrānām mūlam etāni, SS, 1, 4) The other three (Aupadhenava, Aurabhra, and Paushkalāvata) being no longer extant, this one (Sausruta) has an added importance

It is unlikely that the present SS is the original one, it may have been redacted by another Suśruta in the first century A D The text claims to contain the teachings of Dhanvantari in one of the eight branches of medicine, viz , surgery (śalya) The chapters begin with "As the revered Dhanvantari taught Suśruta" (yathovācha bhagavān Dhanvantariḥ Suśrutāya) The followers of Dhanvantari (called Dhānvantariyas) were popular even during the days of Charaka as specialists in surgical operations (CS, Chik Sth 5, tatra Dhānvantariyānām adhikārah kriyāvidhau, vaidyānām kṛta-yogānām vyadha-śodhana-ropane)

Dalhana, the celebrated commentator on SS, mentions that SS was redacted by Nāgārjuna (prati-samskṛtā'pīha Nāgārjuna eva, SS, 1,1) The Nāgārjuna that is referred to here may have been the great Mahāyāna master and alchemist who lived in the first century A D [See NĀGĀRJUNA]

Thus the extant SS has three layers the original treatise by the 'elder' Suśruta (Vṛddha-Suśruta), the later recasting by Suśruta, and the still later additions and amendments by Nāgārjuna But it is impossible to segregate them in the present corpus of SS However, the last book (Uttara-tantra), which is in the form of a supplementary section, is decidedly a later addition

The extant SS consists of six books (sthānas) and 184 chapters (adhyāya) But it was obvious that the original Samhitā consisted only of five books and 120 chapters The content scheme provided in SS, Sū Sth 3, gives this number (sa-vimsam adhyāya-satam pañchāsu sthāneshu), as well as the break-down 46 chapters in Book 1 (Sūtra-Sthāna), 16 in Bk II (Nidāna-Sthāna), 10 in Bk III (Śārīra-Sthāna), 40 in Bk IV

(Chikitsā-Sthāna), and 8 in Bk V (Kalpa-Sthāna) Descriptive titles are also given here

After the enumeration of the eight chapters in Book I, thus drawing the section on contents to a close (adhyāyānām śatam vimśam evam udīritam), there is a half-verse (29) which introduces the sixth Book (uttara-tantra) "Hereafter (atah-param) the later section (tantram uttaram), by its very name as later (sva-nāmaiva), will be described"

While the first five Books deal almost extensively with surgery (śalya), the last Book (supplementary) is designed to deal briefly with the other six branches of Āyurveda (śālākya-tantra, kumāra-tantra, kāya-tantra, bhūta-tantra, rasāyana and vājīkaraṇa), leaving out toxicology (agada-tantra) The expression uttara is explained as 'the best' (śreshthatvād), 'the section that deals with many matters' (bahvartha-samgrahāt), or the section which comes at the end, viz after the main thing is discussed' (paśchimam) (v 43)

Book I (Sūtra-Sthāna) (46 chapters) deals with preliminary matters concerning medical study It provides the framework of surgery as the focal theme of the work Surgical instruments are described, and instructions regarding operations are given 'Śalya' is defined in terms of extraneous matter that is introduced into the body Diseases are classified, and prognostic details are mentioned The rôle of the three dhātus (vāta, pitta and kapha) is explained Drugs are classified, and their curative merits (like emetic, purgative, alterative, etc) specified

Interesting aspects of this book which can be called the 'First Principles' are the introduction to medical science (especially surgery), medical education and training, the theory of therapeutic substances, and dietetics

Book 2 deals with pathology (Nidāna-Sthāna) (16 chapters), causes and symptoms

of various diseases (diseases of the nervous system, haemorrhoids, calculus in bladder, fistula-in-ano, diseases of the skin, urinary ailments, abdominal tumours, dropsy, internal abscess, enlargement of glands and of scrotum, venereal diseases, elephantiasis, fractures and dislocations and diseases of the mouth

Book 3 (*Śārīra-Sthāna*) (10 chapters), is mainly devoted to anatomy and physiology. But the human constitution is also explained with reference to the 'soul' and foetal growth. Vital parts of the body (*marma-sthānas*), the vascular system, venesection, management of pregnancy and handling of children have been explained.

Book 4 (*Chikitsā-Sthāna*) (40 chapters) is an elaborate account of therapeutics in various diseases. Ulcers, wounds, haemorrhoids and fractures are dealt with first, and are followed by other ailments (like skin-diseases, urinary disorders, diabetes and abscesses, diseases of the mouth, and swellings). Preventive medicine is considered next, followed by prescriptions of standard formulae. Rejuvenation and virilification are also dealt with here. Medicated oils and baths, emetics, purgatives, syringes, enema, inhalations and gargles constitute the closing of the Book.

Book 5 (*Kalpa-Sthāna*) (8 chapters) deals with vegetable, mineral and animal poisons. The chapter opens with possible food poisons, and goes on to deal with snake-bites, bites of other animals like rats, dogs and jackals. Treatment and drugs are also prescribed. The chapter closes with insect-bites.

An interesting and intriguing detail to be found in this Book is the suggestion that loud sounds of the drum (*duṇḍubhi*) smeared with antidotes are capable of destroying poisonous germs that float in the air (*bheryah patahaścha dīgdhā nānadyamānā viśham āśu hanyuh*, 7, 72). Hearing these sounds, or looking at the flags and festoons

smeared with the antidotes or touching them prevent the contagion of poison (*śra-vanād darśanāt sparśāt viśhāt sampratimuchyate*).

The supplementary Book (*uttara-tantra*), which is voluminous (66 chapters) is now regarded as Book 6. In the first division (26 chapters) pertaining to minor surgery (*śālākya*) (19 chapters) deal with diseases of the eye and their treatment. The next two chapters are devoted to the diseases of the ears, the next three to the diseases of the nose, and the last two to diseases of the head. This is followed by the division (12 chapters) pertaining to paediatrics. Along with the diseases that affect the children (*kumāra-tantra*) influence of evil spirits (seizures, *graha*) is also dealt with. The third division (21 chapters), general therapeutics (*kāya-chikitsā*), deals with fever, diarrhoea, consumption, tumours, heart-diseases, anaemia, jaundice, haemorrhage, fainting, alcoholism, asthma, dysuria and strangury. The fourth division (three chapters) deals with insanity and epilepsy with reference to supernatural aetiology (thus called *bhūta-vidyā-tantra*) as well as with normal medical aspects. The final division of the section (four chapters) is general in nature, dealing with the six tastes (*rasa*), principles of hygiene, medical terminology and the abnormal operations of the doshas.

The *SS* is remarkable in many respects. As many as 76 kinds of eye-diseases are described, of which 51 are regarded as cases for ophthalmic surgery. It deals with cataract-crouching. The author was aware of the optical lense being the seat of vision [*See OPHTHALMOLOGY*]. The work describes 101 blunt instruments and 20 sharp instruments suitable for surgery, the former group includes various pincers, forceps, hooks, tubes, etc., and the latter, many cutting devices like knives, scissors, bistouries, lancets, saws, trocars and needles. Different kinds of operations like excision, incision,

scarification, puncture, probing, drainage of fluids, and suturing are described [See SURGICAL INSTRUMENTS]

Operative treatment of harelip, rhinoplasty, herniotomy, laparotomy, extirpation of tumours, removal of ovaries and fistula are dealt with. Midwifery is a special area of the medical care and treatment that is elaborated here. Application of forceps and Caesarean section in cases of difficult delivery are suggested here [See MIDWIFERY]

As many as 300 surgical operations (with 42 different surgical processes) are considered here. The amputation of limbs, setting of fractures, abdominal sections, treatment of splenic enlargement, removal of fistula and haemorrhoids, reduction of hernia and ruptures, and obstetric manipulation are some of the surgical problems that have been attended to. Fourteen kinds of dressings are discussed here [See SURGERY]

The work describes 12 kinds of leeches (six of which are poisonous) for purposes of blood-letting.

SS deals with 1,120 diseases, grouped under three heads: bodily ailments due to injury, natural infirmities due to old age (including congenital diseases), and mental disorders. It mentions over 700 plants of medicinal value, and also classifies them into 37 groups (*ganās*) of diseases in which they are indicated.

It may be noted that the vegetable drugs prescribed here are larger in number than what we find in CS, and the drugs of animal origin are less in number (177 in CS, 57 in SS), while the number of minerals and metals used as drugs remains the same in both (64).

The work was translated into Arabic even before the 8th century closed. Known as *Kutab-Shah-Shun-al-Hindī*, it was rendered from the original Sanskrit into Arabic by Ibn Abīlīsaibī. It was also known as *The Book of Susruta* (*Kutab-i-Suśrut*). Rhazes (b. A.D. 680) was acquainted with SS.

Among the early editions of SS Madhusūdan Datta's (Calcutta 1835), Jībānanda Vidyāsāgar's (Calcutta 1877), and Avināshchandra Kaviratna's (Calcutta 1888) are prominent. The work was translated into English in parts by U.C. Datta (1883), A. Chattopādhyāya (1891), A.F.R. Hoernle (1897) and the complete translation was done by A.M. Kunte (Bombay 1876) and Kuñja-lāl Bhīshagrātna (1907-11).

Hessler's Latin translation is not available now.

The text of SS appears to have had many readings, as can be gleaned from the commentary of Jaijjata, Dalhana and *Chkṛp* (*Bhānumatī*). Chandrata, son of Tisata, attempted to restore the original reading (Suśrute pāthaśuddhim Chandrato vyadhāt), but the work is no longer available.

There are two epitomes of SS, *Laghu-Suśruta* and *Suśruta-Sāra*.

The earliest commentary on SS was by Jaijjata, whom the well-known gloss *NīS* quotes. The work has unfortunately not come down to us. There is an incomplete commentary by Gayadāsa (10th century?), known as *Nyāya-chandrikā* (or *Sauśruta-pañjikā*), also quoted in *NīS* frequently. There is another incomplete commentary (till SS, 1,43,5) by Chakrapāṇi-Datta, the celebrated commentator on CS (c. 1060), called *Bhānumatī* (or *Tātparyatīkā*) (ed. by Gangāprasād Sen, along with *NīS*, Calcutta 1888). Brahma-deva (c. A.D. 1080) wrote a gloss (*uppana*) on SS, which also has been referred to in *NīS*. Gadādhara, father of Vanga-sena, is said to have compiled a metrical summary of SS (*Suśruta-śloka-vārttika-praśna-vidhāna-tīkā*), which has been cited in *VyMK*. There are references to two other commentaries by Bhāskara and Mādhava.

The most important commentary, however, is *Nibandha-saṅgraha* by Dalhana (12th century) (ed. by Gangāprasād Sen, in 15 parts, Calcutta 1888 onwards, Jībānanda

Vidyāsāgara, Calcutta 1891, Avināsh Chandra Kaviratna and Chandra Kumār Gupta, Calcutta 1885 onwards) It utilizes the earlier commentaries by Jaijjata, Bhāskara, Mādhava, Gayadāsa and Brahma-deva It quotes another commentary *Gūḍha-pada-bhanga-tippana* of unknown authorship [See DALHANA]

T

Tibetan medicine When Tibetan religion and way of life were Indianised during the seventh century, Indian medicine also made a formal entry into this Himālayan region It is probable that the folk practices in all the Himālayan countries were common, and therefore considerable medical wisdom must have been included in the transaction between the Indian side of the Himalayas and the Tibetan

It is, however, uncertain what the state of Tibetan medicine was like during the days when Bon religion alone prevailed But many of the practices characteristic of this period survived in later Tibetan medicine Important among them are protective charms (shu-deg, Yungs-kar, etc), talismans worn about the neck or tied round the arms, precious stones and minerals, mystic pills often containing mercury (rin-chen ril-bu), and employment of shamans to drive away the demon of disease by incantations and awesome ritual It may be noted that such practices were prevalent in India also at that time, and that they have survived to this day

Tibetan medicine accepted the basic prin-

ciples (e g the pāñcha-bhautika theory, the tri-dosha doctrine, the concept of preventive medicine) and practices (herbal medicine, rasāyana, diagnosis and prognosis, diet, regimen, etc) of Āyurveda and adapted them to the geographical and cultural conditions peculiar to Tibet Thus, there are aspects of Tibetan medicine which have grown beyond the confines of Āyurveda (like pulse-examination and urine examination), and which contain the hard core of local folk practices Unfortunately, the world is as yet little acquainted with all the dimensions of Tibetan medicine, despite some valuable publications in English in this field (e g, *Principles of Lamaist Pharmacognosy* by Britan-dzan-phun-tshogs, Leh, 1970, *An illustrated Tibeto-Mongolian Materia Medica of Āyurveda* by Lokesh-Chandra, New Delhi, 1971, *Tibetan Medicine* by Rechung Rimpche, Berkeley, Univ of California Press, 1973, *Tibetan Medicine with special reference to Yoga-Śātaṅga*, by Bhagwan Dash, Library of Tibetan Works and Archives, Daramsala, India, 1976, *The Ambrosia Heart Tantra*, with annotations by Yeshe Doenden, Tr by Jhampa Kelsana, Library of Tibetan Works and Archives, 1977

These and other texts were cast from Sanskrit into Tibetan by official translators (lo-tsā-ba) during the reigns of the Tibetan Kings Khri-Srong-lde-btsan and Ral-pachan (between A D 750 and 836) Many more Indian works of medicine arrived in Tibet during the reign of Ye-Śes-'od in the 10th century Tibetan medicine may be said to have assumed its present form (based largely on Āyurveda) during the period between the 12th and the 14th centuries Medicine was accorded a place in the traditional five-fold 'branches of learning' (rig-gnas, skt vidyā-sthāna), as gso-ba-rig-pa (i e, *chikitsā-śāstra*), other four being arts and crafts, *bzn-rig-pa*, grammar and prosody, *Sgra'i-rig-pa*, logic and the art of ex-

position and disputation, *tshad-ma-rig-pa*, and religious studies, *man-don-rig-pa*

Tibetan translations of Sanskrit texts on medicine along with their commentaries in Tibetan were included in one of the two sacred canons of Tibetan Buddhism, viz Bstan-hgyur (the Tanjūr) There are as many as 22 medical texts of Indian origin included in this collection (to be found in volumes Se, He, E, Ko, Kho, No, Mo and Do of the Narthang edition) These works are valuable inasmuch as their original Sanskrit versions have been lost in most cases, almost irretrievably, e g , Nāgārjuna's *Vaidya-jīva-sūtra*, Chandranandana's *Asṭāṅga-hṛdaya-vṛtti* and *Padārtha-Chandrikā* (another commentary on Vāgbhata's work), Ravigupta's *Vaidya-siddha-sāra*, Dānadāsa's *Bheshaja-samskāra*, Vyādi's *Rasāyana-Śāstroddhṛti*, and Raghunātha's (described as a Kshatriya of Mathurā in the Magadha country) *Bhushak-Raghunāthāmnāya*)

The most popular among such works, and most often relied upon by medical practitioners in Tibet, is *Rgyud-bzi*, whose title in Sanskrit is given as *Amṛta-asṭāṅga-guhyopadeśa* Legend relates that the Indian patriarch in Tibet, Padmasambhava (to whom the entire Lāmāist system is due), directed his Tibetan disciple Vairochana to go to India and learn this text from the then celebrated physician in India, Chandranandana (Zla-ba-la-dga-ba in Tibetan), around A D 780 Ascribed to this Indian teacher of medicine is a gloss on Vāgbhata known as *Vaidya-asṭāṅga-hṛdaya-vṛtti*, (cf *AHr* edition by Venkateshwar Press, Bombay, 1928) the Tibetan translation of which has been preserved In the 10th century, another Tibetan, of [note, Rin-Chen] bzang-po, came to India and lived here for ten years studying medicine according to Vāgbhata's system

As in Āyurveda in India, in Tibetan medicine also Charaka, Suśruta and Vāgbhata

have provided the main framework If the lineage of medical masters in India begins with Brahmā the creator, the Tibetan lineage begins with Buddha-Kāśyapa who taught Brahmā, who in turn taught Dakṣa-prajāpati

The patron-deity of medicine as well the progenitor of the medical system in Tibet is the Buddha-Śākyamuni as 'Sovereign Healer', who in his *sambhoga-kāya* appears with his right hand held in a gesture of assurance (*abhaya*) and also holding a fruit of myrobalan (regarded as the most effective drug), and his left hand holding a bowl containing three kinds of 'ambrosia' or remedies, one for combating ailments and driving away death, the second for combating the ill-effects of age, and the third for invigorating the mind and facilitating meditative absorption He is said to have delivered not only the medical teachings but the most effective formulae for curing 404 ailments

The subsequent succession of medical teachers is the same in both accounts Aśvins, Indra and Atreya In the Tibetan account Atreya's line continues through DKa-'gnis spyod, Mu-khyud-'dzin, Gshol 'gro sKyed, Me-bzin-'jug (Agniveśa), Lug-nag (*Krishna-mesha*?) and Raya-skegs sñā Each of these wrote a treatise, and all the works were compiled and redacted by Rtsa-ra-ka (viz , Charaka) This work is known as *Rtsa-ra-ka sde brgyud* (in Skt *Charaka-ashtavarga*) There is an elaborate Tibetan commentary on this work by the sage Ldan-'phreng-ba, running to about 600 chapters

Atreya is also regarded as the teacher of Thang-la-'bar (viz , Dhanvantari), from whom the surgical system evolved It would appear that surgery was at one time practised in Tibet, but it was abandoned in due course, and does not figure in the present-day Tibetan medicine

It is probable that alchemy was an aspect of medicine even in pre-Buddhist Tibet But its importance grew due to the impact of

Nāgārjuna (in Tibetan, Klu-grub), the great versatile genius whose works on varied subjects number about 200 in their Tibetan translations. In Tibet, his fame rests not only as a philosopher and as a tāntrik but also as an alchemist (*rasa-siddha*) and as a medical author (See NĀGĀRJUNA). There are many works in Tibetan on the employment of mercury in medicine, some of which are ascribed to Nāgārjuna. The concept of ambrosia (*amṛta*), actually an alchemic preparation meant to conquer death and diseases (404 ailments), is involved in the Tibetan medical lore in a significant manner.

Although Āyurveda provided Tibetan medicine with the basic conceptual framework and the essential pharmacopoeia, Tibetan genius made many innovations and discovered numerous indigenous drugs. Of great importance are the methods of examination of pulse and urine, that were remarkably efficient as diagnostic aids among the traditional medical practitioners in Tibet (known as *emchus*).

Tisāṣa. He is the author of *Chikitsā-kalikā*, a popular medical work of 400 verses composed during the Gupta period (c. A.D. 500). It was intended mainly for the student of medicine.

The name suggests the author's Kāshmīri origin. One of the MSs mentions that he was Vāgbhata's son, but this appears to be a mistake.

His son, Chandrata, was also a medical writer [See CHIKITSĀ-KALIKĀ].

Todarānanda. This is a comprehensive compendium of general information got prepared by Todara-malla (around 1589), a khatri nobleman from Punjāb and minister of the Mughal emperor, Akbar. It includes an extensive medical work known as *Āyurveda-saukhyam* (Anūp Skt Lib,

Bikaner). Several experts from Banaras are said to have contributed to this gigantic work, dealing with 23 different aspects of traditional culture, including medicine.

Āyurveda-saukhyam is encyclopaedic in its nature, and comprises 97 chapters, dealing with the basic principles, *materia medica* (*nighantu*), iatro-chemistry, pathology and examination, treatment of diseases and hygiene. The voluminous work is still unpublished in its entirety. The portions (10) dealing with drugs of vegetable, mineral and animal origin (*materia medica*) have been collected, edited and translated into English by Bhagavān Dāsh and Lalitesh Kāshyap in a volume (*Materia Medica of Ayurveda*, Concept Publishing Co., New Delhi, 1979). The first six chapters of the work have been planned to be brought out in another volume (*Basic Principles of Ayurveda*) by the same authors.

Verses from *BP* are found to be included in this work. There is a suggestion that Bhāva-Misra was associated with Todara-malla's project.

U

Ugrāditya. Author of *Kalyāna-kāraka* (c. A.D. 850), this Jaina ascetic belonged to the Deśi-gana, Pustaka-gaccha of the Panaśoka (the present-day Hanasoge village in Mysore district in Karnāṭaka) branch of the Mūla-saṃgha in the lineage of the celebrated Kundakunda.

He learnt medicine under another Jaina teacher Śrī-nandi who resided on the mount Rāma-giri in Trikalīṅga-deśa identified with the modern Rāma-tīrtha or Ramakonda in

Viśākhapattanam District in Āndhra Pradesh This work was written on the same mount

He is said to have visited the court of the Rāshtrakūta monarch, Nrpatuṅga-Amoghavarsha I (A D 815-877) of Mān-yakheta to deliver a discourse on the need to reject the use of animal food in medicine (vaidya-śāstreshu māmśanirākaranārtham) This discourse has been included as an addendum (pariśiṣṭa) to *Kalyāna-kāraka*, entitled *Hutāhūtādhyāya* (the section on what is good and bad for health) He also argues against the use of alcoholic preparations for medicine [See KALYĀNA-KĀRAKA]

of one Vāgbhata is valid The numerous commentators on *AHr* as well as all later medical writers in India have always held this view

Vāgbhata, son of Simhagupta was named after his grandfather, the great physician Vāgbhata (bhīṣagvaro Vāgbhata ity abhūn me pitāmaho, nāma-dharo'smi yasya), he hailed from the Sindhū country (Sind) He studied medicine under his own father, and later under a Buddhist mendicant and physician, Avalokita by name (samādhigamya guror Avalokītāt) He himself recounts that he "churned the ocean of Indian medicine with its eight divisions and prepared *AS*", which was an immense work, and that finding it unwieldy for general practitioners and students, he abridged it in *AHr*

The former work is not only voluminous but is in mixed prose and verse, as *CS* and *SS* are, while the latter is shorter and is versified, often with considerable poetic flourish, so that students would find it easy to memorize The contents and literary style leave no doubt that author of the two works was the same The former is usually referred to as *Vrddha-Vāgbhata* (meaning 'elaborate') and included in the 'Big Three' (*Vrddha-trayī*) of Āyurveda, and the latter, called *Laghu-Vāgbhata* (meaning 'concise') is included in the 'Little Three' (*Laghu-trayī*)

Gn Sen assigns him to fifth century A D on the basis of the possible reference to Vāgbhata by the Chinese pilgrim, I-tsing, when he said that originally medicine existed in India in eight books, and that lately they were compiled in one book by an author (*Records*, Takakusu, p 128) Hari-Śāstrī Parādkar, the editor of the standard text of *AHr*, holds that he belonged to the latter half of the fourth century on several considerations (*Skt Intro* p 15) Kunte would push his date back to the first or second century B C Hoernle, who had two Vāgbhata in his mind, placed Vāgbhata I

V

Vāgbhata Regarded as the author of one of the three major medical source-books (*samhitā*) in India, he is classed with Charaka and Suśruta, and held in great reverence all over India, especially in the South

While Indian tradition is acquainted with but one Vāgbhata, the author of two treatises *Astānga-samgraha* (*AS*) and *Ashtāngahrdaya-samhitā* (*AHr*) based on the former. Hoernle argued that the author of the former work was Vāgbhata I (*Vrddha-Vāgbhata*) who lived in the 7th century (A D 625), and that the author of the other work was Vāgbhata II, who perhaps lived a century later (*Medicine in Ancient India*, pp 10-15) Although his evidence was slender and far-fetched his views have been widely accepted even by Indian scholars But Gn Sen and Hari-Śāstrī Parādkar have conclusively proved that the traditional view

around A D 625 (*Osteology*, Oxford, Intro p 11) and Vāgbhata II in the 8th or 9th century (Ibid , p 16)

Reference to Buddhist religion are numerous in his two books, and it is likely that he was a Buddhist. The name of his teacher (Avalokita) certainly suggests that he was a Buddhist. Devotion to divinities like Ārya-Avalokita, Parna-Śabarī, Aparājītā, Maha-māyūrī and Ārya-Tārā (who are of folk origin but were assimilated into the Buddhist pantheon) is prescribed as a curative aid (*Chik* 2). Some spells which are typically Buddhist (*dhārmic*) are also mentioned. His manner of dedicating the merit he acquires by writing this work to the weal and welfare of all beings is also characteristically Buddhist (*krtvā yach chubham āptam śubham astu tato jagatah AHR* , 3,40,9)

However, that he was not a dogmatic Buddhist and that he was favourably inclined towards the Vedic culture also are amply evidenced in his books (*cf* A M Kunte *Intro AHR* 1880, pp 5-6)

Among his students Indu and Jaijjata are counted. The former has prepared a commentary entitled *Śāśilekha* on AS, the only commentary available on it.

There are several other Vāgbhata known to Indian literature, including the one who wrote *Rasa-ratna-samuchchaya*, a work of the thirteenth century prescribing mineral recipes for diseases [*See ASHTĀNGA-HRDAYA and ASHTĀNGA-SAMGRAHA*]

Vaidya-Jīvana. A short medical treatise composed by LOLIMBA-RĀJA (*Lolambara*) before A D 1600, in the manner of an ornate poem (*kāvya*). There is an erotic element in the poem, which is planned to be the author's address to his beloved (Murāsa or Ratna-mālā by name) concerning various ailments and their cures. The effort is both unique and interesting and it is successful as a medical work.

The author confesses that there is nothing

original in this work (*sva-kapola-kalpita* *ihāsti na kiñchit*, verse 6). He has compiled the formulae from earlier medical writers like Charaka, Suśruta and Vāgbhata. In a little over 200 verses in elegant metres, he treats of fever, diarrhoea, grahanī (chronic diarrhoea), cough, asthma, rheumatism, eye-diseases, jaundice, women's ailments, tuberculosis, ulcers, urinary disorders, eczema, piles, acidity, heart-diseases, giddiness, dropsy, diseases of the teeth, ear and head. There is also a section on tonics and aphrodisiacs.

The prefatory verses enjoin that the physician must carefully determine the nature of the disease by standard methods, and consider the curability of the disease before beginning the treatment (v 8). There is a warning that the patient must reject the treatment offered by an ignorant physician (v 9). The author is convinced that medicines are unnecessary for the patient who is careful about food habits (*pathya*), and useless for one who is not (v 10). This verse is cleverly worded to convey a double meaning (*pathye satī gadārtasya kim aushadha-nishevanam?*), the second half of the verse repeats the words with a mark of elision between the first two words.

The work is frequently commented upon. Well-known is the commentary known as *Sukhānanda* (1910), other commentaries include *Dīpikā* (Harinātha-Gosvāmī), *Jagach-chandrikā* (Bhagīratha), *Vidyānanda-karī* (Prayāga-datta), and a gloss by Rudrabhatta.

The work is also known as *Lolimbārājyam* [*See LOLIMBA-RĀJĀ*]

Vaidyaka-Śabda-Sindhu. An excellent modern medical dictionary in Sanskrit, compiled by Umesh-chandra Gupta (Calcutta, 1894), at the instance of Mahendralāl Sircār and with the support of Mahārājāh of Vizianagaram.

The work is voluminous and comprehen-

sive Terms of medical interest are arranged alphabetically, and brief descriptions of the drugs, diseases, recipes and preparations are given, along with relevant extracts from classical texts. The names of drugs are given not only in Sanskrit, but in Latin and in some modern Indian languages

Vangasena Author of *Chikitsā-sāra-samgraha*, an encyclopaedic work on pathology and treatment (Calcutta 1884, ed Nandakumār Goswāmī, 1889, and Jivānanda-Vidyāsāgar, 1893). The oldest MSs of this work is dated A D 1276. The author's date is given as c A D 1119 (before A D 1200, according to P K Gode)

Son of Gadādhara, he was born in Kantikāvāsa (village Kañjikā) in Bengal. He learnt medicine from his father (tātapādām gurum cha, prefatory verse), and compiled this immense work as "a collection of well-tried medical formulae from elders in the art of medicine" (vaidya-vrddha-siddha-prayoga-nivaha, 1)

"Health is the necessary precondition for the four-fold human values (righteous living, wealth, pleasures and salvation), and diseases steal them away, and foil the very purpose of life. I shall here explain the pathology as well as treatment (*sa-nidāna-chikitsitam*) for these diseases" (prefatory verses 6 and 7)

The work consists of 104 sections (adhikāras), arranged on the model of *Mādhava-nidāna*, enumeration and description of diseases also follow the latter. But curative aspects and formulae are special features of this work. Each disease is considered under two heads: symptoms and causes (atha nidānam lakshanam āha), and treatment methods and drugs (atha chikitsitam āha)

Despite the comprehensive character of the work, it is interesting that it is altogether silent about 'pulse-examination' (nādi-parīkshā), calcination of metals (although purification of quick-silver has been men-

tioned, 'rasa-parpata', orbicular preparation with melted sulphur), and opium. His treatment of metals is all too cursory and meagre, apart from the reference to iron and steel while dealing with haemorrhoids.

The work is poetical, excepting in two sections (Nasyādhikāra and Samsōdhana samśamāna-rasa-dravyādinām vargādhikāra) where prose passages abound. The language throughout is elegant Sanskrit, and versification has not interfered with the scientific rigour or clarity.

The work has been consistently popular among physicians, especially in Bengal, and often selected portions of this work are committed to memory by students. The work describes diseases comprehensively and contains detailed accounts of treatments. The account given here of dietetics and pharmacology are excellent.

Vāryovida An ancient medical authority quoted by Charaka (CS, *Sū sū*, ch 12, vātakālakāliyam, 9 and ch 26, 8). He appears to have been a sage belonging to some royal family (rājārshi).

Participating in a conference concerning the wind (vāyu) both within the body and outside, the condition of its normalcy, the sources of its derangement (prakopanam), the methods of its reconstitution (upaśamāni), he gives a comprehensive account of the rôle of wind (vāyu) in the human constitution, in health and in disease. It supports the structure and function of the organism (tantra-yantra-dharah). It is distinguished by five operations: prāna, udāna, samāna, vyāna, apāna.

In its normalcy (akupitah), it motivates all behaviour (pravartakaś cheshtānām), prompts and regulates mind (niyantā pranetā cha manasah), activates all sense-organs (udyojakah sarvendriyānām), organizes all sensory function (sarvendriyārthānām abhivodhā), integrates all the constituents of the body (sarva-sārīra-dhātu-

vyūha-karah), unifies the bodily action (sandhāna-karah śarīrasya), stimulates speech (pravartako vachah), constitutes the very nature of touch and sound (prakṛtiḥ sparśa-śabdayoh), functions as the root of auditory and cutaneous sensations (śrotra-sparśanayor yonih), fans the stomachic fire (samīrano-gneh), dries up and throws out the waste products (ksheptā bahir malā-nām), and facilitates the continuance of life (āyusho-nuvṛtti-pratyaya-bhūtaḥ)

In its deranged condition, it produces various kinds of disturbances in the body, agitates the mind, generates grief, fear, confusion and anxiety, interferes with the five-fold functions (prāna, apāna etc.), and cuts down happiness and life

He winds up the discussion with an eloquent eulogy on wind as the very godhead (vāyur eva bhagavān iti), which provokes another sage Marīchi to inquire what use is all this knowledge for a physician. Marīchi reminds Vāryovida that the conference is interested only in matters of medicine (bhishag-vidyām adhikṛtya yam kathā prāvartata iti). Vāryovida retorts that without a theoretical understanding of the normal and abnormal conditions of the wind, a physician would not be able to handle the wind to the best advantage of the patient, and would not know how to restore the deranged wind to its normalcy [See MARĪCHI]

He agrees generally with the views of Badīsa as regards the derangement and restoration of the wind in the body [See BAD-ĪSA]

There is an interesting viewpoint that is ascribed to Vāryovida (CS, Sū sth, ch 25,12-13). He rejects the all-important role of mind in the causation of diseases [See ŚARALOMA]. He accepts the involvement of mind in bodily ailments, but bodily ailments cannot occur without direct physiological causes, the three *doshas* (narte śarīrāc chārīra-rogaḥ). Further, he argues, mind cannot function independent of the body

(na manasah sthitiḥ) Chkp. adds *rite śarīrād iti yojyam*, and explains that the mind being saturated with rajas and tamas will always be within the physiological context. Śivadāsena takes this statement to mean that mind is not involved even in the production of the body, mind, he suggests, emerges only after the body gets formed. He concedes, however, that mind is the chief source of mental diseases (mānasa-rogeshu eva manasah kāranatvam)

He held that tastes (rasa) are six in number: heavy (guru), light (laghu), cool (śīta), hot (ushna), unctuous (snigdha), and dry, coarse or astringent (rūksha). These differences in qualities (guna-bhedah), and in action (karma-bhedah) are due to the different tastes (rasa-kṛta eva) (cf Chkp on CS, 1,26,8). Ātreya agrees that tastes are six only, but enumerates them as sweet (madhura), sour (amla), saltish (lavana), acrid (katu), bitter (tikta), and astringent (kashāya) (CS, 1,26,9)

Vijaya-rakṣita. He is the author of *Madhu-kośa* (along with Śrīkantha-Datta), a commentary on *MN*, a 13th century work

His commentary closes abruptly at the end of section 32 (on calculus, *aśmarī*), and it is continued and completed by his student, Śrīkantha-Datta

The prefatory verse (5) remembers the earlier medical authorities: Bhattāra (-Harichandra?), Jaijjata, Gadādhara, Vāpya-Chandra, Chkp, Bakula, Īśvara-Sena, Bhoja, Īśāna, Kārtika, Śukra, Sudhīra, Maitreya and Mādhava, and claims to have examined all other related disciplines (tantrāntarāny api vilokya). The commentary promises to supply during the course of the commentary diagnostic material that will be useful, but left unsaid by the author Mādhava (upayuktam ihānuktam nidānam Mādhavena yat, grantha-vyākhyā-prasangena mayā tadapi likhyate). The promise is amply fulfilled [See MADHU-

KOSHA]

Virasimhāvaloka. A work written by, or for, a Rajput prince VĪRASIMHA (son of Tomāra-deva-varman) who lived around 1380, it seeks to press astrological details for the aetiology and treatment of diseases. It is one of the early works that bring astrology within the field of medicine, the earliest being *Ahr*. It claims that the royal author has prepared this work for the welfare of the world (viśvopakāra), having churned the milky oceans of astrology, Vedic lore (āgama), dharma-śāstra, tantra (nigama) and medicine (āyurveda).

Veterinary science. Care of domesticated animals has been a continuous preoccupation with Indian physicians, all through the country's history, both in the villages and in the royal courts. The pastoral economy during the Vedic times, and earlier in the Indus Valley civilization, made this concern relevant to social life. Horses, elephants, cattle, camels and buffaloes have been harnessed to human use, and have been regarded as valuable possessions.

And thus a fairly extensive literature grew up concerning the animals, their classification, identification of breed, nature, rearing, training, management, anatomy, diseases and treatment. Unfortunately much of this literature is lost. But the available portions and references indicate the comprehensive character of many of these works.

A branch of Indian medicine developed along the veterinary direction, principally dealing with the care and cure of horses, (*hayāyurveda*), elephants (*gajāyurveda*), and cattle (*gavāyurveda*). ŚĀLIHOTRA, PĀLAKĀPYA and SAHADEVA are prominent authors of standard texts on horses, elephants and cattle respectively. There is a book on hawks also (*Śyamika-śāstra*) by RUDRADEVA of Kumaon. It may be recalled that hawks were not only pets in royal

households, but were used for communication, sports and entertainment.

The general orientation of veterinary science in India followed in the main the basic position of Āyurveda—the pañcha-bhūta theory, the tri-dosha doctrine, and the adequacy of herbal medicine. Surgical operations also were frequently conducted on animals and special instruments were designed for this purpose. Care of the sick animals was considered, and numerous prescriptions have been given in this regard. There were hospitals specially meant for animals as can be gleaned from the edicts of emperor Aśoka. The villages had peripetatic cattle-physicians (*go-vaidyas*), and kings and chieftains patronized specialists in diagnosing and treating the diseases of horses and elephants. *Hārīta-samhitā* (3,2) speaks of physicians who treated not only human beings but also animals (like deer, snakes and rodents).

The diseases of horses and their treatment constituted an early concern. Śālihotra, Garga and Nakula are celebrated authors on the subject. Several *purāṇas* (e.g. *Agni*, 281, *Gāruda*, 197 and 207, and *Matsya*, 189 and 191) deal with this topic, and give extracts from standard texts like *Śālihotra*. So does *Nīti-sāra* of Śukra. Nakulā, a Pāṇḍava hero in *Mahābhārata*, was reputed to be an authority on horses, *Aśva-chikitsā* in his name has come down to us (ed. Umesh Chandra Gupta, *Bibl. Indica*, 1887).

Other works include Bhoja's *Śālihotra* (11th century, *Munich Catal.*, Jolly), Dīpamkara's *Aśva-vaidyaka*, Jayadatta-sūri's work of the same name (1500 *Bibl. Indica*, 1887, ed. by U. C. Gupta, also ed. Jībānanda Vidyāsāgar), Gana's *Aśvāyurveda*, Sārṅgadhara's *Vāji-chikitsā*, and Induseṇa's *Śālihotra-sāra-samgraha* (1812). There are several references to other works on the subject, which however are no longer available (like *Haya-līlāvati*, *Revottara* and *Aśva-śāstra*, mentioned by the commentator Mal-

linātha on the Sanskrit poem *Śīsupālavadha*, 5,60) Simha-datta's voluminous work on horses (described as *aśva-śāstra-samudram*) (No 13318 of GOML, 38) has also been lost

PĀLAKAPYA's work deals comprehensively with the diseases and treatment of elephants (ed Anandāśrama Series, Poona) The subject was a favourite one during the Mughal rule, and the traveller al-Berūnī quotes from a work of this kind Other works on the same subject include *Mātanga-līla* and *Gaja-chikitsā* Kautilya's *Arthaśāstra* and Kāmandaka's *Nīti-sāra* deal with the subject There is an elaborate account of it also in *Agni-purāna* (289-91)

SAHADEVA's *Gavāyurveda* is no longer available, but the tradition of cattle-treatment (go-vaidyā) that it contained became widespread in the country *Agni-purāna* deals with the subject in an elaborate manner. *Parāśara-samhitā* contains references to cattle-care and cattle-physicians

Vopadeva: He was a prolific writer who lived around A D 1300 Among his works two are medical in content (1) *Vaidya-śata-śloki* (containing a hundred recipes that contribute to health) and (2) *Siddha-mantra prakāśa*, a commentary on his father's *Siddha-mantra* (a work in 170 verses)

Son of the physician Keśava of Vīdarbha (Berar) he migrated to Devagiri (Aurangabad district, Maharashtra) He was patronized by HEMĀDRI, who was minister to the Yādava Kings of Devagiri, Mahādeva (1260-1271) and Rāmachandra-Deva (1271-1309) He studied under the reputed physicians, Dīneśa and Bhāskara

His father Keśava-bhishak composed *Siddha-mantra* which was a sort of medical glossary as well as *materia medica* Vopadeva's *Prakāśa* on it is elaborate and gives information about how to prepare and administer medicines like pills and powders (Madras, 1860)

Vṛnda (Vṛnda-Kuṇḍa): Author of *Siddha-yoga*, a standard medical manual, which influenced Chakrapāṇi-Datta The work frequently mentions diseases which were prevalent in Western India, it is therefore suggested that he hailed from that part of the country Nothing is known about him, except that he was a devotee of Śiva, Chandī and Ganeśa (who figure in the initial verse) He, in humility, describes himself as "dull-witted" (Vṛndena manda-matīnā) and claims that he wrote this work which 'determines the diseases' (gada-viniśchaya), for his own spiritual welfare (ātma-hitārthīnā)

He is assigned to the 9th century A D , as Chkpr has used many of his formulae [See SIDDHA-YOGA]

Y

Yoga-ratnākara. An anonymous and extensive compilation of medical formulae, padded with valuable information concerning health, hygiene, eight-fold examination of the patient (astha-sthāna-parīkshā), seasonal requirements, beneficent food articles and habits, weights and measures, pharmacy, metallurgical procedures, toxicology, and five-fold treatment procedures (pañcha-karma) Anatomy and surgery are excluded from its scope

A MSS of this work, dated 1746, is available But when precisely this work was composed is not known It must be later than BP, for new preparations from *Chopachini* are given here But syphilis (phiranga) mentioned in BP is not to be found here

The work appears to be indebted to *Bīhad-yoga-Taranginī*, both in its content and style

The work was published in the Ānandāśrama Sanskrit Series, Pune in 1889 Part I of this work was published in Mysore in 1899 (Govt Oriental Library with annotations in Kannada and Telugu) Part II, as yet unpublished, deals with disease categories along with their diagnostic details and treatment procedures, toxicology, rejuvenation and aphrodisiacs

The significance of this compendium consists in the unprecedented emphasis on the curative value of 'proper food, drink and conduct' (Pathya) in various diseases as well as specific prescriptions in this regard While the rest of the work is largely a mere compilation, the claim in this context is that a special effort was made to ascertain the *pathya* aspect in earlier medical works (ālokya vardya-tantrād esha nibadhyate, vyādhutānām chikitsātham pathyāpthyaviniśchayah) According to the compiler, the three essential ingredients of successful treatment are diagnosis (nidāna), medicine (aushadha) and pathya, he therefore suggests that the physician must consider them carefully (trīni yatnena chintayet)

Another interesting detail found here is the account of tobacco (tamāku), which is said to cure cough, asthma, flatulence, troubles of the teeth, and excesses of kapha and vāta, but to produce giddiness, vomiting, purging and optical ailments (section 557)

There is an elaborate account of 'night life' (*rātri-charyā*) dealing principally with healthy sex activities (vv 409-441) This is a theme that is usually not covered in earlier medical works Useful properties of several grains, vegetables, fruits and different kinds of meat as articles of food are listed (vv 481-600) Recipes (kṛtānna) are also indicated

Judging from the recipes given, the com-

piler appears to hail from Mahārāshtra, from where the MSS was also recovered and where the work is popular (Ānandāśrama Sanskrit Series, 1889)

Yoga-Śataka Pelliot's archaeological expedition in the Kucha region (Central Asia) discovered this text in Sanskrit along with Kuchaen translation

Ascribed to the great Nāgārjuna (in Tibetan Klu-grub), the text is extant in its Tibetan version (*Sbyor-ba brgya-pa*), prepared by Jetakarna Buddha-śrī-jñāna and Ōi-ma rgyal-mtshan, and included in the Bstan-hgyur (Tanjūr) division of the Tibetan Buddhist canon There is extant in Sanskrit another work with the same title, ascribed to Vararuchi, which bears a close resemblance with the Tibetan work (cf Bhagwan Dash *Tibetan Medicine, with special reference to Yoga-Śataka*, Library of Tibetan Works and Archives, Dharamsala, 1976)

The Tibetan work consists of 125 verses, with two additional verses by the translators The first two verses appear to be by them Verse 4 describes the formulae as ambrosia and describes the value of accurate examination of the disease, its causation, and signs The next verse describes the 'eight organs' of Āyurveda, including 'Pañchakarma' as the eighth and omitting the usual vājīkarana from the list

The work purports to give one hundred medicinal formulae "which are praised by expert physicians" (beginning with verse 6), arranged in the standard division into general physical ailments (kāya-chikitsā), diseases of head and neck (śālākya), surgical condition (śalya), toxicology (agada), psychiatry (bhūtavidyā), paediatrics (śīsu-roga-śamana), and rejuvenation (rasāyana), There are further sections (uttara) dealing with the five specialized therapies (pañchakarma) (v v 98-102), useful single drugs (26 in number) for common ailments (v 103),

and treatment for the doshas (v v 106-121)

The work ends with an admonition that the physician should comprehend both what is expressly stated in the book and what is left unsaid, and that he should above all understand the disease itself before he attempts to cure, and that he must decide upon the course of treatment in his own wisdom (v 123)

The work in the canonical collection has been supplied by an annotation (chen) by the celebrated scholiast Bu-ston Rin-po-che (1299-1364)

There are several texts of *Yoga-Śataka* in Sanskrit (not the same as the above, but similar to it) discovered in Nepal, Ceylon and different parts of India. Prescriptions of *Yoga-Śataka* were popular in Ceylon

Appendix

Selections bearing on the History of Indian Medicine

I. THE AŚVINS AS PHYSICIANS OF GODS AND MEN

RV, 5, 73,—

Come, O Aśvins who partake of a share in many sacrificial offerings, come whether you are close at hand or far off, or in different places (1)

I invite the two of you, who encourage those that approach you, who are great achievers, who are the most adored, and who never fail (2)

You have arrested one of the wheels of your chariot in order to increase the glory of the Sun, and with the other wheel, you traverse the spheres to regulate (the activities of days and nights (3)

Leaders that you are, Atri (our ancestor) acknowledged with gratitude your help when he found relief from the intense 'heat' that he was suffering from (6)

O Aśvins, rightly did the sages of yore praise you as bestowers of happiness (health) We welcome you to come in our midst and bestow (on us) happiness (9)

RV, 5, 74,—

Denizens of the higher realms and affluent in mental powers, O ye Aśvins, descend upon the earth and listen to our prayers The son of Atri approaches you with prayers so that you may shower benefits on us (1)

O Aśvins, you have stripped the old sage Chyavana of his worn out form like a dilapidated armour, you have made him young again, and desired by women (5)

[Note The legend of Chyavana's rejuvenation is given in Śatapatha-brāhmaṇa, (4 1 5)

Śaryāti, the King, was angered by his frolicsome daughter, Sukanyā, whom he gave away in marriage to an old sage, Chyavana When this young girl was residing in Chyavana's hermitage, the Aśvins approached her and asked her to marry them The girl refused to accede to their desire, and expressed her resolve to live with her old husband Later, the Aśvins, requested by her, suggested that the sage should bathe in a particular pond, and when he did so youth was restored to him cf also RV,1,117,13, 1,118,6, 5,74,5, 7,71,5 and 10,39,4 cf also RV, 1,112,15 where Kali was similarly rejuvenated]

Here is your devotee! May we ever be under your care, and prosperous Listen to my prayer, and come to me with your numerous benefits and succour (6)

Your chariot which is the swiftest of chariots, which frightens the foes and which is adored by the humans, may that chariot draw near us, well-disposed towards us (8)

RV, 5, 75,—

Aśvins who are masters of the mystic lore, heed to my words of welcome! I adorn with words of praise your excellent chariot beloved of men, bestower of benefits and carrier of comforts (1)

[Note 1 The chariot in which the Aśvins travel is said to have three wheels, representing residence and travel in the three spheres, viz , earth, mid-region and the heavens cf RV,5,76,4

The chariot is thus described as 'tridhātu', constituted of three elements (RV,8,39,9) Sāyana explains that the three elements refer to earth (prithvi) (viz , food), water (āp) and fire (tejas) Elsewhere the expression is made to signify the three gunas, viz sattva, rajas, and tamas (RV,8,47,10), the three colours, viz , white, black and red (RV,5,43,13), or three vital currents, viz , prāṇa, apāṇa and vyāṇa (RV,3,26,7)]

[Note 2 Aśvins are addressed here as 'masters of the mystic lore' (mādhvī), which ex-

pression is explained by the commentators (Sāyana and Skandasvāmin) as referring to the following legend included in Vājasaneyā-brāhmaṇa Indra taught the sage Dadhichi (Dadhyañich) son of Ātharvāna, the mystic doctrine of Brahman known as 'Madhu', but warned him against teaching it to others on pain of losing his head. The Aśvins approached the sage for learning this same doctrine. When the sage refused to teach them and told them why, the Aśvins offered to provide him with another head, in case he lost his. Then the sage taught them. When his head fell off, the Aśvins brought a horse's head and fixed it on his shoulders *cf* also RV, 1, 119, 9]

The dawn has arrived. The season's fire has settled on the altar and is blazing forth. O Aśvins, who bestow wealth and vanquish the enemies, your immortal chariot is in readiness to travel. Come, and listen to my prayers (9)

RV, 5, 76,—

O Aśvins, spoil not the perfect (rite)! Come, and we will adore you here. Arrive at dawn and bring us your protections against unhappiness, and bestow prosperity on the performer of the rite (2)

May we be joined with the Aśvins, equipped with their protection, which secures happiness to us and enables us to lead a good life. O immortal Aśvins, shower on us wealth, progeny and other good things in life (5)

RV, 5, 77,—

Your splendid chariot, covered with gold and delightful like honey, exudes (health-giving)-liquids, and is heading towards us, fast as wind and quick like thought, to our succour, O ye Aśvins (3)

[Note See below Note on RV, 1, 119, 1]

RV, 5, 78,—

O Aśvins, liberate from the wooden box the frightened and imploring sage, Sapta-

vadhṛī, with your wondrous skill (6)

[Note The legend of the sage is given in the commentary. The brothers of this sage became jealous of him, and attempted to prevent his nightly intercourse with his beautiful wife so that he may not beget children. They imprisoned him every night in a big box made of wood, and belaboured him severely during the day. The unhappy sage, who also became ill and emaciated, implored the aid of the Aśvins. They promptly arrived, freed him from his captivity and restored his health. The sage could thus unite with his wife and beget a child *cf* verses 7, 8 and 9, where prayers are addressed to the Aśvins for safe delivery]

RV, 1, 116,—

O Aśvins who are leaders of men on the path of good, you bestowed sharp and wide intelligence to Kakshīvat of the Pajra family. You made your horses exude the invigorating drink by their very hooves, and filled a hundred pots (7)

[Note The sage Kakshīvat, thirty-third in the line of the Āngira-sages, became mentally deficient, owing to an illness. The Aśvins cured him, probably by a rasāyana formula. The sage then became renowned for his brilliant mind (puramdhi) *cf* also 1, 117, 6]

You cured, with a cold infusion (hima), the intense heat (gharma) of Atri, you nourished him with food, and extricated him safely from the dark cavern into which the demons had driven him (8)

[Note The legend given by the commentators narrates that a group of demons kidnapped the sage and held him in captivity. They also set fire to him. When he implored the Aśvins to come to his aid, they poured water on the fire, and freed him from his confinement. But this seems to be a symbolic narration of the sage being cured of his high fever, burning sensations, loss of appetite, and depression. It is usual in the Vedic hymns for diseases to be referred to as demons

Significant also is the employment of the expression 'hima' in the verse, which is obviously a medicinal preparation of cold water Skandasvāmin interprets the word to mean 'rain-water' (vrshtiudaka) cf also RV, 1,118,7, 5,78,4-6, 7,70,5, 8,62,3, etc, 10,39,9]

O disapprovers of falsehood, you brought the well to the thirsty sage Gotama, and upturned it so that he may drink his fill (9)

[Note: Gotama was travelling in a desert, and was tormented by excessive thirst He prayed to the Aśvins, who helped him cf RV, 1,85,11, where this feat is ascribed to the Maruts But the allegory suggests the relief that the sage obtained from a disease characterized by abnormal thirst The well that the Aśvins brought to the sage is intriguingly described in the verse as 'bottom turned upwards' Does it refer to a treatment?]

Human leaders that you are, you came to know how Vandana was hidden (in a well) in an unfrequented region, like a treasure, and you recovered him This courageous deed of yours is truly praiseworthy, adorable, and desired by us (11)

[Note Vandana, the sage, was dragged by the demons to a deserted jungle, and pushed into a well The verse speaks of the well being recognized by the passersby (*darśatāt*), who however were unable to come to the aid of the unfortunate sage The Aśvins pulled him out Even here, the reference is to a grave illness which troubled the sage, and which was cured by the Aśvins Elsewhere (RV,1,119,7), there is reference to the same sage who is here described as emaciated, and whom the Aśvins rendered young and long-lived Another sage Rebha, was in a similar predicament, (viz , 'pushed into a well'), and the Aśvins are said to have saved him (RV, 1,112,5) cf also RV 1,112,5, 1,119,6, 1,118,6, 10,39,8]

O Aśvins, who protect the folk and fulfil the desires of people, the princes Vadhrima-

tî sought your aid, and you gave her splendid arms (13)

[Note: According to the commentator Skandasvāmin, Vadhrimatī was a warrior-princess, who lost her arms in a battle and the Aśvins provided her with artificial limbs made of gold plates (*hiranya-hasta*) Sāyana, however, interprets the word Vadhrimatī to mean 'one who had an impotent husband (*vadhri*), the Aśvins cured him of this defect, and eventually he became the father of a male child named *Hiranya-hasta* cf also RV, 1,117,24, 6,62,7, 10,39,7]

O disapprovers of falsehood, you saved the life of a sparrow (*vartikā*) from the clutches of a wolf (*vrka*) You gave sight to the blind poet who implored your help Such is your competence and benefaction to many (14)

[Note cf also RV, 1,117,16, 1,118,8, 10,39,13]

You provided even in the darkness of a night iron legs to Viśpalā, the lady of the prince Khela, when her legs were severed, like the wings of a bird, in the course of a battle, she could walk and carry the treasure to safety (15)

[Note: The legend is that the prince Khela was engaged in a war with his enemies, the bone of contention being some treasure His wife Viśpalā, was also fighting on the battlefield, the enemy attacked her and cut off her legs, when it was dark The prince's priest Agastya invoked the assistance of the Aśvins, who immediately arrived and provided her with artificial limbs made of iron She was made fit enough to walk instantly, cf also 1,117,11, 1,118,8, 10,39,8]

When Rjraśva was cursed by his father to become blind, for cutting up a hundred sheep to feed his wolf, you physicians came to his help and gave him sight (16)

[Note: Rjraśva was the profligate son of King Vrshāgira This young man had a pet wolf (which was actually the transformation of the mount of the Aśvins) To feed it, the

prince was in the habit of collecting sheep belonging to his people. The king was annoyed at this outrage against his people, and caused his son to become blind. The Aśvins, however, took pity on him and repaired his eyes *cf* also RV, 1,117,17 and 1,120,6

It is significant that the Aśvins are described here as 'physicians' (bhishajau) *cf* also Aitareya-brāhmaṇa, 1,18, Taittirīyāsamhitā 2,3,11]

O disapprovers of falsehood and the ever-young ones, you easily carried to safety the sage Jāhusa, who was surrounded by deadly foes (*viz*, who was besieged by numerous diseases), and he was placed in a place inaccessible to enemies (*viz*, he was made healthy and resistant to diseases) (20)

O Aśvins, having praised your skill (in healing), may I desire to live well and long, prosperous and healthy (*lit*, with my eyesight intact) and enter into old age as one enters his own home (25)

RV, 1, 117,—

O charming ones, you extricated the sage Vandana who had been hidden in the well, who was like one who was stretched upon the ground, like the sun who was hidden in the night, but who was lustrous like some splendid ornament (5)

[Note 'Hidden in the well' suggests being old and worn out (*cf* 1,119,7) or in a state of deep depression, probably symptomatic of a mental illness. There was also a catatonic involvement, suggested by being stretched on the ground. The absence of any physical disease is suggested by the similes of the sun and the lustrous ornament *cf* also Note on RV, 1,116,11]

O leaders of men, the two of you restored to Viśvaka (son of Kṛṣṇa) his lost son, Vishnvāpu, and bestowed on the old maid Ghoshā, languishing in her father's house, a husband (7)

[Note 1 Viśvaka's son was gravely ill and was given up for lost, the Aśvins were able

to cure the boy. One commentary suggests that the son had gone away and that the Aśvins brought him back. Skandasvāmin, however, explains that the boy was dead, and that the Aśvins resuscitated him *cf* RV, 1,116,23, 10,65,12]

[Note 2 Ghoshā, the learned daughter of the sage Kakshīvat, became afflicted by an incurable skin disease (kushta), and was therefore abandoned by her husband. She had to return to her father's house, and languish there without a hope of cure or of normal family life. The Aśvins, however, cured her, and made her husband accept her again *cf* also RV 10,39, 3 and 6, 10,4,5. Two hymns in RV (10,39 and 40) are ascribed to her]

O Aśvins, you bestowed on the leper sage Śyāva a charming bride, on the floundering Kanva eyesight, and on Nārshada the faculty of hearing. Praiseworthy indeed are your deeds (8)

[Note 1 The Śyāva the eldest son of the sage Ghora, who was the son of Agni, was afflicted by a serious skin disease (leprosy) which had turned his skin dark and hideous. His thighs had withered, and his head had become deformed. The Aśvins corrected these conditions, eliminated the source of the disease, and restored the young man to health, so that he could marry. This is the explanation of Skandasvāmin *cf* also RV, 1,117,24]

[Note 2 The sage Kanva had lost his eyesight, and was unable to move about. The Aśvins restored his eye-sight (tajasam chakshur indriyam) (Sāyana and Skandasvāmin)]

[Note 3 The son of Nārshada, a sage, was hard of hearing. The *asuras*, to test his supernatural powers, confined him in a dark cell in the night with a promise that he would be set free if he could tell when it dawned. The Aśvins in the meantime came to him and corrected his auditory defect. He could hear the strains of music when the

Aśvins played on Vīnā at dawn, and could thus secure his freedom Skandasvāmin gives the name of this boy as Kanva]

O removers of distress, your devotee Tugra was anxious about his son who was being tossed about in an agitated ocean You saved this boy with your speedy boats and swift horses The grateful father had reason to praise you afresh (14)

[Note: The 'agitated ocean' refers to serious illness, 'the boats and horses' refer to treatment-methods and drugs See below Note on RV,1,119,4]

O the praise-worthy Aśvins, the care bestowed on us by the two of you has made us happy You have rendered the diseased folk (srāmam) healthy (sam rñitah) It is therefore that the clever Ghosā has addressed her prayers to you, the wish-fulfillers (19)

[Note Ghoshā the learned lady (brahmavādinī) was troubled by an ailment, and sought the help of the Aśvins to cure her (rogopaśamanārtham) (Sāyana)]

O worthy ones to behold (dasra), you made Śayu's old, milkless, and barren cow young and full of milk You also made by your expert device Purumitra's daughter a wife to Vimada (20)

[Note Purumitra's daughter also was barren, like Śayu's cow The Aśvins effected a cure for this condition]

O generous and compassionate leaders of men, you gave golden arms to Vadhṛimati, and you rendered whole and alive the body of Śyāva, which was cut into three bits (24)

[Note 1. See above Note on RV 1,116,13]

[Note 2 The sage Syava was afflicted by leprosy (kushthita), and his body was thus deformed and mutilated The Aśvins treated him and made him wholesome Skandasvāmin suggests that they operated on his body at three places, or in three different ways (tribhiḥ prakāraih), as a part of treatment See also above Note on RV,1,117,8]

RV, 1, 118,—

Come to us in your excellent chariot,

which has three seats and three wheels, and which is triangular in shape Fill our cows with milk and our horses with energy, and make us prosperous (2)

[Note: The verse describes the desirability of the medical care The Aśvins are welcome to the mortals who need to be healthy and wealthy But the three-fold details are obscure The 'seat' (vandhura) is the place where the driver sits Sāyana explains that this seat is constructed on three columns (?) The idea of three wheels, however, has been explained as referring to three dhātus (see above Note 1 on RV 5,75,1)

It may be that the three 'seats' (or columns) refer to the three *gunas* (sattva, rajas and tamas), the three 'wheels' to the three dhātus (vāta, pitta and śleshman), and the triangular shape to the three treatment procedures (kāyachikitsā, śalya and rasāyana)]

Come, O charmers, come in your splendid chariot and listen to the praises of this devotee Truly have the sages of yore described the two of you as most prompt in relieving the misery of those that seek you (3)

O charmers, who also shower benefits on people, you helped with your valiant deeds Vandana and Rebha (who had 'fallen into the well', viz , become dejected), the son of Tugra (Bhujyu, who was being tossed about in the stormy sea, viz , who was anxious and agitated), and Chyavana (who had become old and infirm) (6)

[Note The verse refers to three kinds of deeds that the Aśvins are celebrated for raising up people who are hidden in the well, bringing back to safety those who are caught in the violent sea, and restoring youth The three probably refer to the therapeutics (for milder ailments), surgery (for more serious ailments), and rasāyana (for rejuvenation)]

O Aśvins, you relieved Atri of the intense heat that he was suffering from, you also gave him food that nourished and delighted

him, you gave bright vision to Kanva who was blinded by a cover (cataract?) (7)

O leaders of men and well-born ones, come to us in your excellent chariot, come to our succour, and bring us prosperity, well pleased with our words of welcome (10)

RV, 1, 119,—

We, who need nourishment, O Aśvins, invoke your splendid chariot, which is filled with many miracles, swift like thought, drawn by fast-moving steed, adorned by many banners, rich in water, abundant in food, and productive of happiness (1)

[Note The Aśvin's chariot signifies the therapeutics that they were famous for. The cure effected by them was miraculous, the recovery was fast and permanent. They administered their medicine in water, and along with food. They made the patient wholesome and happy cf RV 1,120,10, where their chariot is described as 'without horses' (anaśvam)]

There are diverse descriptions of their chariot. It is entirely made of gold (RV 1, 1,80,1, 4,44,4,8,5,29, 8,22,8). It is drawn by asses (rāsabha RV, 1,34,9, 1,116,2 also Nirukta, 2,28), by horses (1,117,2), by birds (6,63,6), by swans (4,45,4), by eagle (garuḍa), (1,18,4), by horses in the shape of falcons (8,5,7). The Aśvins are never described as riders of horses, although the expression 'Aśvin' suggests their possession of horses (aśva).

The daughter of the sun (Sūryā) is said to travel with them in their chariot, which is fast like the thought (manojava) and which is protected in all ways (śtōti), and which travels across the worlds to the one who invokes them (RV, 7,68,3). Drawn by powerful steed, the golden chariot of the Aśvins is said to block up heaven and earth (rodasī), and come to men for their succour, following the track of waters (7,69,1). The chariot is renowned among the five orders of beings (pañcha-bhuma) (7,69,2). It contributes to

our purification (śam) and happiness (yoh) (7,69,5)]

You have recovered by your own devices Bhujyu, who was lost, and returned him from afar to his father's home. You have also saved from great distress the King Divodāsa (4)

[Note cf also 1,117,14. The legend given by Sāyana is as follows. Bhujyu was the son of Tugra, a King. The enemies of the King had stationed themselves in a distant island and were causing him trouble. The King sent his son Bhujyu with an army to drive them away. But the boat in which Bhujyu was travelling to the island broke in mid-sea, and Bhujyu was helpless. He implored the Aśvins to come to his aid. They hurried to him with their own boats and horses and brought him back to land in safety.]

But the verse is obviously allegorical. The Aśvins are invoked only in cases of disease, injury and anxiety due to disease. Bhujyu is described as being 'lost' (gatam), and there is no mention of sea in the verse, and it would be absurd to employ horses to recover a drowning man in the sea. The expression 'by your own devices' (sva-yuktibhiḥ) does not suggest 'by your own horses and boats'. Bhujyu was ill, and gravely so. He had gone so far away from the world of living, that his recovery due to the treatment that the Aśvins administered became celebrated.

References to Bhujyu's distress and the Aśvins' help are frequent in RV cf also 8,5,22, 10,39,4, 10,47,7, 10,65,12 etc. Interesting is the reference (7,68,7) that Bhujyu was brought to distress by those who seemed friendly to him (sakhāyah) but in reality wished him ill (durevāśah). Is there a suggestion here that excessive indulgence in luxury can cause distress?

cf RV 1,182,5-7, where the Aśvins are said to have fashioned a 'boat' which was 'alive' (ātmanvantam) and 'equipped with wings' (pakṣinam) for Bhujyu (son of Tug-

ra) to save him from the dark and deep sea. Four of such 'boats' were sent to him, with the help of which Bhujyu was able to come up, even as birds fly up in the air with the help of their wings]

O charmers, skilled as you are, you restored youth to Vandana who was old and worn out (even as a wheelwright repairs) an old cart. You also delivered that sage from the womb of his mother (kshetrāt) May (such) beneficent acts of yours protect those who seek you (vidhate) (7)

[Note: Vandana's rejuvenation has already been mentioned. The sage who was delivered by the Aśvins is said to be Vāmadeva (Sāyana). This is a case of difficult labour in which the Aśvins exhibited their skill]

RV, 1, 120,—

O Aśvins, you have bestowed on people great (benefits) (mahah). You have rid people of great (distress) (nīratatam satam). You afford us abode. Become our saviours, and guard from the powerful wolf (vrka, viz, death) (7)

RV, 8, 73,—

O Aśvins, you freed Atri from the heat by cold (infusion) (hima). May your protection be close at hand (3)

The Aśvins, are welcome in times of distress (yāmahūtamā). I should secure intimate relation with them. May the protection of the two of you be close at hand (5)

RV, 8, 89,—

The charming Aśvins, physicians (bhishajā) that you are, you bring happiness to people (mayobhuvā). You were praised by Daksha. Now Viśvaka invokes you for the sake of his son! Do not spurn our friendship, and unyoke your chariot when you come to us (viz, abide with us) (1)

RV, 8, 22,—

O Aśvins, come to us with the same protections quick and sure, that you offered to Paktha, Adhṛgu and Babhru, come and

heal the sick (bhishajyatam yad. āturam) (10)

The Aśvins are the masters of the waters (śubhapati), and they enter where distress is (rudra-vartini). I invoke them at dawn and during the rest of the day. O healers (rudrau), who are rich in nourishing food (vājīnīvasū) leave us not at the mercy of the enemy (14)

[Note: The Aśvins are addressed as the Rudras (lit, 'terrible ones' or 'shouting ones'), but the word also signifies 'those who drive away distress'. Rudra is also associated with the art of healing, he is called 'the best among physicians' (bhishaktama) cf, RV, 2, 33, 4. The enemy referred to in the above verse is obviously disease]

Abide close to us, with your numerous and quick protections, for our safety (avase), O the rainers of benefits, who are fast like thought, who protect the devoted and subdue the arrogant (16)

May we obtain from you, O Aśvins, strength (suvīryam), happiness (sushthu), and what is desired by all (vāryam), and what is not struck down! May we obtain all the benefits (vāmāni, good things in life), when you, rich in nourishing food (vājīnīvasū) come to us (18)

RV, 10, 39,—

O Aśvins, inspire our truthful songs! Fulfil our intentions and acts (dhiyah)! Enliven (udīrayantam) our many-dimensioned intellects (puramdhih)! We need all these. And bestow on us the wealth that we cherish. Establish us thus amidst the prosperous, like the delightful Soma (2)

O Aśvins, you have helped the old maid that languished in her father's home without the prospect of marriage, you have also helped the lowly (apamasya, i.e., bed-ridden), the poor of vision (andhasya), and emaciated (krāsya). You are truly the healers of the-distressed (bhishajā rutasya) (3)

O Aśvins, the two of you are physicians that bestow great benefits (bhishajā

mayobhuvā)! Therefore do we sing your ancient exploits in this direction (purānā vīrya) in the world, for our well-being (avase) (5)

I (Ghoshā) implore you O Aśvins, and pay heed to my words! Give me comfort (śikshatam) even as the parents afford to their child Save me from the imminent curse before it strikes me and renders me helpless (anāpīh), unconscious (ajñā), despondent (asajātyā), and shorn of wit (amatīh) (6)

[Note Sāyana takes the word śikshatam to mean wealth (dhanam) He interprets anāpīh as devoid of relatives, ajñā as devoid of gratitude, asajātyā as devoid of faith, and amatīh as devoid of wisdom, and all these as attributes of the curse]

You lent your chariot for Śundhyu, the daughter of Purumitra, to be carried to the residence of her husband Vimada You were invoked by Vadhrimatī of brilliant mind, and you came to her succour (7)

[Note 1 Vimada was the sage who gave eight hymns in RV (10,20-27) When he married the daughter of Purumitra, he wanted to take her home in great style The Aśvins arrived and conducted the bride and bride-groom in their own chariot to the latter's home (Sāyana) But the reference here is probably to some ailment of the girl which prevented her from being accepted by her husband]

[Note 2 About Vadhrimatī, cf., Note above on RV 1,116,13 The expression 'su-shutim chakratuh' has been explained by Sāyana as meaning either 'you gave her an excellent offspring', (su-prasavam) or 'you bestowed wealth on her' (aiśvarayam vā)]

You restored youth to the wise sage Kālī, who was approaching old age (jaraṇām up eyushah), you raised Vandana from the well, and you made the maimed Vandana capable of moving about (8)

Nirukta, 12, 1

The Aśvins are so called because they are

everywhere (from root asū, 'to spread'), one of them in the form of water (rasena) and the other in the form of light (jyotishā) The Aurnanābhas, however, explain the word 'Aśvin' as meaning that they are possessors of horses (aśvaih) Who are these Aśvins? According to some, they symbolize earth and heaven (dyāvā prthivī), others see in them symbols of day and night (aho-rātrau), still others take them as sun and moon (sūryā-chandramasau) There are some (i e., the aitiḥāsikas, historians) who regard them as meritorious princes (rājānau) One of them is the divinity of the heavenly firmament (dhyusthāna), and the other of the mid-region (madhya-sthāna)

Bṛhaddevatā, 6, 162,—

Tvashtṛ had two children, a daughter, named Śaranyū and a son named Tri-Śīras Śaranyū was given in marriage to Vivasvān They begot twins, Yama and Yamī In due course, Śaranyū entrusted the care of the twins to another woman (whom she conjured up in her own image), and went away into wilderness (lit., disappeared). Vivasvān lived with this phantom woman and begot Manu Later, he recognized the trick, and went in search of Śaranyū She had in the meantime assumed the form of a mare and was wandering about Vivasvān also assumed the form of a horse and won her affection Their offsprings in this condition were the twins, Nāsatya and Dasra They became celebrated as the Aśvins, 'the horse-divinities'

II RUDRA AS PHYSICIAN

RV, 2, 33, —

O Rudra, we take care not to annoy you by our talk, and, O generous one (vrshabha), we will not offend you by ignoble praises, nor by invoking other divinities Invigorate us (or our children) by your medicinal herbs (bhesajebhūh), for I hear you are the best among physicians

(bhīṣaktamam) (4)

O Rudra, where is your famous hand that heals (bheṣajah), that bestows happiness (jalāśah), and that delights (mīlayākuḥ)? O generous one (vr̥ṣabha), you can rid even the gods of their distresses (rapasah)! Have mercy on me! (7)

RV, 5, 42,—

Praise him who has an unfailing arrow (svīṣuḥ), whose bow is mighty (sudhanvā), and who is the lord of all the healing herbs (viśvasya bheṣajasya kṣhayati) Offer oblations to that Rudra for obtaining a strong and happy mind (mahe saumansāya) Prostrate before him who is an almighty god (asuram devam) (11)

III VARUṆA AS PHYSICIAN

RV, 1, 24, —

O governor, you have a hundred and a thousand medicines (bheṣajah) May your compassionate mind (sumatiḥ) be wide-spread (urvī) and majestic (gabhīra) Drive away the harmful spirit (Nirrti, the demon of death) to a distant place, and rid us completely of the evil in us (9)

O Mitra and Varuna, I take the Soma drink when the sun has just arisen, it heals the sick (āturasya bheṣajam) (17)

IV SOMA AS HEALER

RV, 8, 79, —

Whatever is bare, he covers it Whatever is sick (turam) he heals (bhīṣakti) (He makes) the blind see, and the lame walk (2)

V AIR AS MEDICINE

RV, 10, 137, —

Wind (vāta), blow towards us the medicinal balm (bheṣajam), and blow away from us the evil (repah, viz, disease) Truly are you the universal healer (viśva-bheṣaja), and messenger of the gods (3)

VI WATER AS MEDICINE

RV, 10, 137, —

Water (āpa) indeed is a healer (bheṣaji) Water destroys the diseases (amīva-chātāniḥ), and water cures all (diseases) for all beings (sarvasya) May such water act as medicine to you, and make you happy (6)

VII PHYSICIAN'S PROFESSION

RV, 9, 112, —

Various are our intentions, and various too are the vocations men follow The carpenter seeks wood, the physician (bhīṣak) seeks diseases (rutam), the priest seeks to press the Soma juice Flow on, Indu, for Indra! (1)

I am a singer, my father (or son) is a physician (bhīṣak), and my mother (or daughter) the grinder of corn Different in our vocations, but (alike) desirous of wealth (vasuyavah), we have our place in the world Flow on, Indu, for Indra! (2)

[Note. The word 'tatah' in the verse, according to Sāyana means 'father', but Yāska explains that the word may mean either 'father' or 'son' for it has only the sense of procreation Likewise 'nanā' may mean either 'mother' or 'daughter', according to Yāska (Nirukta, 6, 5), but 'mother' according to Sāyana

Both Yāska and Sāyana give an alternate interpretation to the word 'bhīṣak', i.e., the master of ceremonies (brahmā) who corrects the errors or lapses and prescribes expiatory rites during the course of a sacrifice But this is obviously a far-fetched interpretation, for the verse speaks of professions]

VIII THE HYMN FOR MEDICINAL HERBS

RV, 10, 97, —

Long before (the appearance of) the

gods, even before the three ages (or seasons), were these ancient herbs (purvāḥ oshadhīḥ), bright-coloured and a hundred and seven in number I recognize their abodes (i e , uses) (1)

[Note The expression tri-yugam is taken to mean either the three classical ages (Kṛta, Tretā and Dvāpara) or three seasons (summer, rains and winter) (Sāyana) 'Bright-coloured' (babhrū) means 'invigorating' and 'exhilarating', like Soma It also means 'nourishing' as food and as medicine The antiquity of these medicinal plants is explained as being necessary nourishment for gods, humans and other animals Food must be prior in existence to the animals that live on it

The word oshadhī is explained by Yāska as 'destruction (dhayanti) of the defects or anomalies (oshat, i e , dosha) in the body' (Nirukta, 9, 27) It also means what we ingest as food Medicinal herbs are principally articles of food, which also cure diseases These medicinal herbs are the divinities (devatā) that preside over this hymn (sūkta) consisting of twenty-three verses The seer (rshi) of this hymn is 'the physician' (bhīṣhak), son of Atharvana Āśvalāyana-Śrauta-Sūtra (6, 9) explains that this hymn is to be employed if the participants in a sacrifice fall ill during the session

The 'hundred and seven' abodes (śatam dhāmāni sapta cha) of these herbs may mean either innumerable places of origin (like mountains, plains, river-beds and forests) or innumerable shapes they are found in (like plants, shrubs, creepers, trees, bushes, flowering vegetation, fruit-yielding trees and so on), the 'abodes' may also mean 'names by which they are known and recognized' (Yāska)]

'Śatam sapta cha' may also mean 'seven hundred' and in this case, the reference is to the seven hundred vital points in the human body (marma-sthānas), on which the medicinal herbs act Alternately, the expression

may mean innumerable methods of preparation and application

O dear mothers! A hundred (i e , innumerable) are your places of origin (dhāmāni), and a thousand are the ways you grow (ruhaḥ) O herbs that act in a hundred ways (śata-kratvah), make mine folk free from sickness (agadam kṛta) (2)

Rejoice ever, O herbs, bearing flowers and fruits in abundance, with branches spread alround, and, like horses, conquering disease (sajitvarīḥ) and making all of us go beyond the clutches of distress (pārayishnavah) (3)

I hail you, O herbs who are verily mothers! Physician, I give you horses and cows, clothes, and myself (i e , my service) (4)

Your abode indeed is in the aśvattha tree and in the palāśa (parne) plant! When you take kindly to the physician (purusham savanatha), you render him wealthy (gobhājā, lit , givers of cattle to him) (5)

Where, O herbs, you have gathered together, like the princes in an assembly (samitau, 'on the battle-field' according to Sāyana) the physician is called the wise sage (viprah), for he destroys the evil ones (rakshohā) and drives away diseases (amīvachātānah) (6)

I praise all the medicines (sarva-oshadhīḥ) the aśvavatī, the somavatī, the ūrjayantī, and the udojasa which dispel the diseases (asmai arishtatātye) (7)

Like cows from the shed, O man, the energies of these medicinal herbs (oshadhī-nām śuśmāḥ) issue forth towards you, to render you wealthy (dhanam sanīshyantīnām) (8)

Your mother is celebrated as 'the dispeller of all diseases' (ishkrīḥ), and so are you all known, O herbs! You can indeed fly and move about! Heal, therefore, the sick (āmayatī nīshkrīḥ) (9)

Even as a thief enters the shed (and steals away the cows) all the herbs that are

everywhere (parishthāh) attack the diseases, and take away whatever ailment is in the body (tanvah yat kiñcha rapah) (10)

When I hold in my hand these herbs (oshadhīh haste ādadhe) for rendering the patient wholesome (vajayam) the strength of the disease (ātmā yakshmasya) withers away, even as the life of the birds when the hunter catches them (11)

O herbs, like a valiant (monarch) in the midst of his army (madhyamaśir iva), you conquer the disease completely (yakshmam vibādhadhve) when you enter the (patient's body) from limb to limb, from joint to joint (12)

Get lost at once, O disease, (flying fast) like the jay bird (chasha), (on the wings of) the blue jay (kikidivī), (departing) with the speed of wind, and (along) with the raging storm (13)

O herbs, let each of you approach (avatu) the other, let each join with (upāvata) the other. Thus, all united (samvidānāh), fulfil my prayer (for health) (14)

May the herbs, brought well into being by Brhaspati (ī e, creator), (some) yielding fruits and (some) not, (some) producing flowers and (some) not, may these herbs free us from sickness (muñchantu amhasha) (15)

May the herbs free me from (the distress caused by) curses (śapathyāt), and from (the bonds of) Varuna. May they also free me from the fetters of Yama which hold back my feet (padbīśat), and from all the impurity with regard to the gods (devakībīśāt) (16)

Thus have the herbs, descending from the high heavens, declared "He that is alive (jivam purushah) will not die (na rishyati), when we enter into him (aśnavāmahai) (17)

O herbs who have Soma for monarch, countless (bahvīh) and competent in a hundred ways (śata-vchashanāh) you are the best (uttama) among all the herbs! Be entirely bountiful (aram kāmāya), and a comfort to the heart (sam hrde) (18)

O herbs, who have Soma for monarch, who have spread all over the earth (anu viśthitāh prthivīm), and who have been brought forth by Brhaspati (ī e, creator), provide strength (sam datta vīryam), to this (sick person) (19)

May not he who digs the earth for you (khanitā) hurt you (mārīshat), nor the person for whom I dig (yasmai khanāmi)! May the bipeds (ī e, human beings) and quadrupeds (cows, horses etc), and all beings be free from disease (anāturam astu) (20)

Let the plants that can listen to this prayer of mine as well as those that are far removed and not in sight (dūram parāgatāh), come together (sam-gatya) and bestow strength (sam-datta vīryam) on this man (ī e, the patient) (21)

The herbs gather together and tell their monarch Soma "O King, we will heal (pā-rayāmasi) him whom the knowledgeable physician (brāhmana) treats (krnoti) (22)

[Note Sāyana explains the word brāhmana as 'the physician who is acquainted with the power of the herbs', ī e, drugs (oshadhī-sāmarthyajñāh vaidyah), and the word krnoti as 'administers treatment (chikitsām karoti)

O herb, you are the best (among plants) (uttama), and all the plants (yrkshāh, lit, trees) lie low before you (upastayah)! Let he who hurts us (ī e, the disease that attacks us), lie low before us! (23)]

[Note This last verse is addressed to the Soma plant, according to Sāyana Soma is regarded as the divinity presiding over herbs and other plants. Soma is itself a plant, the exact identification of which is uncertain. There is an entire book of RV (ninth mandala) which is devoted to the glorification of Soma. The entire hymn is to be found also in Tattirīya-samhitā, 4,2,6. It appears that the hymn was employed not only during treatment of diseases by herbal medicine, but also during magic, sorcery and witchcraft

IX ORIGIN OF ĀYURVEDA

CS, 1, 1, 3—34

Bhāradvāja performed severe penances and desired long life. Guided by the sages he approached Indra, the monarch of the immortals. For Indra had obtained the 'science of life' (āyurveda) in its entirety from the Aśvins, who had got it from Dakṣa, who in turn had heard it from Brahma himself.

[Note: Brahma is the creator and the revealer of the Vedic lore. Dakṣa is his offspring, prajāpati, the 'lord of living beings' and the first of human governors. The Aśvins were the divine physicians who also came to the aid of human beings. Indra was a human hero, deified for his valour and achievements.]

When for human beings (those who were endowed with physical bodies) appeared diseases which obstructed their long life, austerities, study and exercise, the great and pious sages who were proficient in philosophical wisdom and experts in restraint over body and mind assembled on the slope of the Himālayan mountain, out of compassion for the living beings, and discussed (about diseases and their cure). Among those sages, filled with the lustre of penance and brilliant like the fire fed with clarified butter, were Anṣiras, Jāmadagni, Vasishtha, Kāśyapa, Bhṛgu, Ātreya, Gautama, Sāṃkhya, Pulastya, Nārada, Asita, Agastya, Vāmadeva, Mārkaṇḍeya, Āśvalāyana, Parikṣi, Bhikṣu-Ātreya, Bhāradvāja, Kapinjala, Viśvāmitra, Āśmarathya, Bhārgava, Chyavana, Abhiṣit Gārgya, Śāṇḍilya, Kaundinya, Varkṣi, Devala, Gālava, Śāṅkṛtya, Bajavāpi, Kuśika, Bādarāyana, Badṛśa, Śaraloma, Kāpya, Kātyāyana, Śarkarākṣa, Hiranyākṣa, Lokākṣa, Paṅgi, Śaunaka, Śakuneya, Maitreya, Maimātāyana, the Vāikhāṇasas and the Vālakhilyas.

They deliberated thus: "Health is the excellent source of the fulfilment of all human

objectives: virtue, wealth and enjoyment. Diseases have now appeared striking at all these and threatening welfare and even life itself. This is indeed a great calamity for the human beings. What can possibly be the remedies for these ailments?" With this thought they contemplated for a while, and in their contemplative vision they beheld the help in Indra. "This monarch of the immortals would tell us the remedy!"

Then they considered who amongst them should be deputed to the abode of Indra to learn from him the remedy. The sage Bhāradvāja volunteered to undertake this task. Thereupon, having been deputed by them, Bhāradvāja went to where Indra resided and saw him glowing like fire, presiding over an assembly of the immortals. Having greeted him, Bhāradvāja communicated to him with humility the message that he had brought from the sages, viz., "Diseases have appeared, frightening all living beings. Tell me the remedy thereof."

Indra, ascertaining the enormous intellect of Bhāradvāja, expounded to him 'the science of life' (āyurveda) in short (or brief) words (padair alpaih) the causes (hetu), symptoms (linga) and therapeutics (auśhadha) — this three-fold knowledge (tri-sūtram), which is enduring and meritorious, intent on the well-being of the healthy as well as the sick, as was learnt by the creator (Brahma). This science of life without limits, but in three branches (aetiology, symptomatology and therapeutics), was learnt by the sage Bhāradvāja promptly and quickly, for his mind was settled on it. Benefited greatly by this knowledge (lit., having secured long life and health), Bhāradvāja communicated this science to the other sages.

The sages obtained this science of enhancing the quality of life (vedam vardhanam āyushah) from Bhāradvāja in order to accomplish the well-being of all creatures.

(prajāhita), and to prolong the life span (dīrgham āyuh) Putting into practice the prescriptions contained in this science, they obtained great happiness and long life

[Note The commentator Chkp discusses briefly the problem of Ātreya-Punarvasu He cites a view, which he rejects as incorrect, that Ātreya was another name of Bhāradvāja He also cites *Hārīta-saṃhitā* to the effect that Ātreya was a disciple of Bhāradvāja the lineage here assumes this form Indra-Bhāradvāja-Ātreya-Hārīta Vāgbhata's remark that Indra taught this science to Atriputra (viz, Ātreya) (Ahr, 1,1,3) merely suggests that Indra had several students besides Bhāradvāja]

Agniveśa had exceptional brilliance and so he was the first to compose a treatise (tantra) on what he learnt, and not because he had received any special instructions from the teacher (Punarvasu-Ātreya) Then the wise ones like Bhela and others prepared their own treatises and presented them to the teacher (Punarvasu-Ātreya) These treatises were very well received by the assembly of sages, who not only approved but praised the works as contributing to the welfare of all creatures

[Note: Agniveśa's treatise (tantra) forms the source book for *Charaka-saṃhitā*]

SS, 1, 1, 2—4

When (long-ago) Divodāsa-Kāśī-rāja, who was none other than the reverend Dhanvantari the best among the immortals, was seated surrounded by hosts of gods and sages, in his own hermitage, Aupadhenava, Vaitarana, Aurabhra, Paushkalāvata, Karvīrya, Gopurarakshita, Suśruta and others approached him, and said "Revered master, we are troubled in mind when we behold human beings, who even though well equipped and attended in life, yet are oppressed by diseases, physical, mental, and accidental, and suffer helplessly much agony We would therefore desire to be instructed by you in the 'science of life' (āyur-

veda) by means of which we may relieve their sufferings in order to help them seek for happiness in life, we may also, incidentally, attend to our own health in life (prānayātrārtham) Because welfare in this world as well as in the world beyond is dependent upon this science (ātrāyattam ahi-kam āmushmīkam cha śreyah), we have come to you to be instructed by you in that science "

To them, the revered master replied "Welcome to all of you You are indeed worthy of being instructed in this discipline!"

BP, 'Pūrva-khaṇḍa', 1, 2-17

I shall first of all write about how this 'science of life' (āyurveda) appeared on earth, and I have consulted many treatises on this matter Āyurveda is the science in which life, what helps it and what hurts it, how disease is caused and how it is cured, are dealt with The human being knows about good life and obtains it through this science, and it is therefore that sages call it Āyurveda

The creator, purporting to reveal the essential import of Atharva-veda, composed in his own name a lucid treatise (saṃhitā) consisting of one lakh verses Then he, the veritable ocean of wisdom, instructed this science with all its branches to Daksha, who was an adept in all activities Later Daksha taught it to the twin-gods (the āśvins), children of Sūrya and noblest among the gods, who became physicians of the gods (suravaidyāh) Having received instructions from Daksha, these Āśvins prepared their own treatise (saṃhitām svīyām), to enhance the knowledge of all physicians (The exploits of the Āśvins are narrated in verses 9-14) By these activities the best among the physicians, the Āśvins, became objects of adoration for Indra and other gods

Indra, beholding the beneficial treatment effected by them, earnestly begged them to impart to him this science Thereupon, the

Aśvins taught Indra the science as they had learnt it. Then Indra communicated what he had got from the Aśvins to several sages headed by Ātreya.

[Note: What follows is an account of how Indra came to impart the wisdom of Āyurveda to Ātreya (verses 18-34)]

Once, the revered sage Ātreya happened to perceive here and there that people were afflicted with diseases, and he began to deliberate: "What shall I do? Where shall I go? How can these folk be free from diseases? I cannot rest in peace when I look at their suffering. I am by nature kind-hearted, and nature cannot be forsaken! When these people suffer, I too begin to suffer! I shall study Āyurveda for relieving the folk of their ailments."

Having thus resolved, Ātreya went to the dwelling of the immortals. He beheld there Indra, seated on his throne and being eulogized by the sages. He was brilliant like the sun, illuminating the ten quarters; he was the great teacher of Āyurveda, and therefore was adored by the immortals. When Indra saw Ātreya entering, he at once came down from his throne and greeted the sage in all humility. He made kind inquiries, and implored to be told the reason of the sage's visit. Ātreya replied: "O monarch of the gods, you are the ruler not only of the heavenly realms, but of all the three worlds, for so the creator ordained. The world of human beings is afflicted by diseases, and the people are sorely distressed. There is grief on earth, and you must take pity on the living beings. Have compassion on the people and teach me the 'science of life' (āyurveda)."

Indra agreed and instructed the sage in the 'science of life' in all its branches (sāṅgam), and the sage returned to earth, having blessed the monarch of the gods.

Then Ātreya, supreme among sages and most compassionate, composed a treatise in his own name (sva-nāmnā samhitām chakre), for the welfare of the entire man-

kind. He taught this treatise to Agniveśa, Bhela, Jatūkarna, Parāśara, Kṣhīrapāni and Hārīta.

Agniveśa was the first to prepare a manual (tantra) based on this instruction, followed by Bhela and others with their own manuals. They all read their manuals in the presence of Ātreya amidst the assembly of sages. Ātreya was happy at these writings and congratulated them. The sages and the gods too were delighted.

[Note: Then follows an account concerning Bhāradvāja in verses 35-56.]

Once, on the slope of the Himālayan mountain, a large number of sages had gathered. Bhāradvāja was the first among them, then Angiras, Garga, Marīchi, Bhṛgu, Bhārgava, Pulastya, Agastī, Asita, Vasiṣṭha, Parāśara, Hārīta, Gautama, Sāmikhya, Maitreya, Chyavana, Jamadagni, Kāśyapa, Gargya, Kaśyapa, Nārada, Vāmadeva, Mārkaṇdeya, Kapīñjala, Śaṇḍilya, Kaundinya, Śakuneya, Śaunaka and others.

They deliberated amongst themselves: "The body alone is truly the source of virtue, wealth, enjoyment and liberation. If it becomes free from diseases, all the above objectives would be fulfilled, but if it is oppressed by disease then penance, study, virtuous conduct, vows of celibacy and even life would be obstructed. Diseases emaciate the body, diminish the vigour, render activity difficult, rob the sense-organs of their function and cause pain to the entire body. They not only forcibly impede our striving, for virtue, wealth, enjoyment and liberation, but quickly take away life itself. How can beings be happy (when diseases abound)? Therefore, the wise among you must think of some means by which diseases are eliminated. Then they addressed Bhāradvāja: "You amongst us are the most suitable. You approach Indra and obtain from him the 'science of life' (āyurveda), which has come to him in a lineage (labdham kra-

māt) By studying it, we will become free from the fear of diseases!"

[Note. Then follows the account of his visit to Indra as found in CS, 1,1,20-29 In verse 57 begins the story of Charaka which continues till verse 65]

When (in the distant past) the Vedic lore was extricated by Vishnu (Hari) in his incarnation as Fish, Śesha (Vishnu's serpentine attendant) obtained a knowledge of the Veda in all its branches and with all the aids of study (vedam sāngam) And (at that very time) he secured 'the science of life' (āyurveda) which was included in the Atharv corpus (atharvāntargatam)

Once he came down in the guise of a wanderer (chara) to acquaint himself with the affairs of the world of human beings He saw people afflicted by diseases and torn with sorrow, he found people here and there agitated, and about to die He was overcome by compassion for them, and their misery filled him with grief He then deliberated upon the means of relieving the folk of their maladies

He became the son of a sage, Viśuddha by name, who was celebrated as learned in the Vedic lore He came here like a wanderer, and no one knew whence he had come Therefore he became known in the world as 'the wanderer' (Charaka) He, this 'preceptor Charaka', shines in the world as the preceptor of the gods shines in heaven, an incarnation of Seshha (Ananta), who healed the diseases of mankind He collected and redacted the treatises (tantrāṇi samskrtya samāhṛtya) of Agniveśa and others who were disciples of the sage Atreya, and prepared a manual in his own name

[Note. Then follows the account of Dhanvantari in verses 66-75]

Once Indra, the monarch of gods, turned his attention to the world below, and found mankind grievously afflicted with diseases His heart was overcome, by compassion, and, taking pity on mankind, he addressed

Dhanvantari thus "O revered Dhanvantari, supreme among the immortals, listen to me! You are competent, and therefore help the living beings What has not been done in times of yore to benefit the world? Vishnu, the lord of the three realms, assumed several incarnations such as the Fish Therefore, go to the world and become a King in the Kāśī region And reveal 'the science of life' (āyurveda), in order to combat the diseases!"

So saying, the master of the gods, imparted the entire 'science of life' (āyushovedam) to Dhanvantari, with a desire to contribute to the welfare of all living beings Having mastered the medical lore under Indra, Dhanvantari came down to the earth and was born in the household of Bāhuja (kshatriya) He became known to people as Divodāsa

Even as a boy, he renounced the pleasures of life and wandered about, performing great austerities With great difficulty, Brahma (the creator) persuaded him to become the King of Kāśī From then on, Dhanvantari became celebrated among people as 'Kāśī-rāja' ('the monarch of Kāśī') For securing the welfare of living beings, he composed his own treatise (samhitā), and taught it to students

[Note. Then follows an account of Suśruta in verses 76-85]

Then by their powers of supernatural intuition, the sages headed by Viśvāmitra learnt that Dhanvantari had appeared on earth as Kāśī-rāja in the Kāśī region Viśvāmitra beckoned his son and told him "Dear one, go to the city of Kāśī, graced by the presence of the Lord of All (Viśveśvara) There is a kshatriya there by the names of Divodāsa and Kāśī-rāja He is in reality Dhanvantari himself, the foremost among the masters of the 'science of life' Learn from him this 'science of life' for the sake of helping mankind (lokapakṛtihetave) The

most sacred spot to visit (tīrtha) is compassion for all living beings (sarva-prāṇidayā), and the most meritorious sacrifice is benefaction (upakāra) ”

Heeding to the words of his father, Suśruta came to Kāśī, along with a hundred youths who were all children of sages. They approached in humility the venerable Dhanvantari, who had then been dwelling as an anchorite in a hermitage (vānaprasthāśrame), surrounded by many sages. When the supreme among the gods, Dhanvantari-Divodāsa welcomed them, and inquired why they had come, Suśruta as their spokesman said “Revered Sir, beholding human beings tormented by diseases, and being in

the grip of sorrow and despair, our own hearts are overcome with sorrow. We have come here to learn from you the means of relieving their distress. Kindly instruct us in the ‘science of life’ ”

The royal sage agreed and taught them. When the delighted sages finished their period of learning, they blessed the royal sage and returned to their homes. Suśruta, among them, was the first to prepare his own manual on these teachings (svatantram), his friends also (later) composed their own manuals. The manual of Suśruta was studied widely, and therefore it was truly ‘well-read’ (Suśruta) and that is how it has become celebrated in the world.

Select Bibliography

Select Bibliography

- Antū-bhāi-vaidyā, *Vanaspati-parichay*, Bombay, Ayurveda Research Inst , 1952
- Āyurveda-mahodadhī (Sushena-vaidyaka), (S) Bombay, Venkateshvara Press, 1915
- Banerjee, D N , *Āyurveda-Śārīa* (S), Calcutta 1951
- Basava, *Basava-rājīyam*, (S), Madras, V Ramaswami Sastrulu and Sons, 1951
- Bhagvat-Sinhjee, *A Short History of Aryan Medical Sciences*, London, 1896
- Bhagavan Dash, *Ayurvedic Treatment for Common Diseases*, New Delhi 1975
- Bhagavan Dash and Lalitesh Kashyap, *Materia Medica of Āyurveda*, New Delhi, Concept Publ , Co 1980
- Bhagvan Dash, *Tibetan Medicine*, Dharamsala, Lib Tib Works and Arch , 1976
- Bhaishajya-ratnāvalī, (S), N N Mitra (ed), Delhi, Motilal Banarsidass, 1962
- Bhāva-mīśra, *Bhāva-prakāśa*, (S), Jivananda Vidyasagar (ed), 1875
- Bhela, *Bhela Samhitā*, (S), Asutosh Mukerjee (ed), Calcutta, Calcutta Univ , 1921
- Bhoja, *Rasa-rāja-mīgāṅka* (S), Bombay, Y T Acharya (ed), 1923
- Binodlal Sen, *Āyurveda-vijñāna*, (S), 2 vols, Calcutta, 1887
- Bose, D M et al (ed), *A Concise History of Science in India*, New Delhi, Indian National Science Academy, 1971
- Bower Manuscripts (S), A F R Hoernle (ed), Calcutta, 1909 (Parts I-VII, Calcutta 1893-7)
- Chakrapāni-datta, *Chikitsā-sāra-samgraha*, (S) Calcutta, Jivananda Vidyasagara 1888
- Chakrapāni-datta, *Dravya-guna-samgraha*, (S), Calcutta, 1871
- Chāmunda, *Rasa-Sanketa-Kalikā* (S), Bombay, Y T Acharya, 1912
- Charaka, *Rasa-sanketa-Kalikā*, (S), Bombay, Y T Acharya, 1912
- Charaka, *Charaka-samhitā*, (S) (with comm of Chakrapāni-datta), Bombay, Nirnaya Sagar 1941, Jamnagar, Gulab Kunverba Ayurvedic Society, 1949 (6 vol)
- Chattopadhyaya, Debiprasad, *Science and Society in Ancient India*, Calcutta, Research India Publ , 1977
- Chopra, R N , *Glossary of Indian Medicinal Plants*, New Delhi, CSIR, 1956
- Chūdāmani, *Rasa-Kāmadhenu*, (S) Bombay, Y T Acharya (ed), 1925, Gondal, Jivaram Kalidas, 1925
- Dalhana *Nibanda-samgraha*, (S), Calcutta, Jivananda Vidyasagar (ed), 1891
- Dasgupta, S N , *A History of Indian Philosophy*, vol II, ch XIII, "Speculations in the Medical Schools", Cambridge, The Syndics of Cambridge Univ Press, 1932
- Devadatta, *Dhātu-ratna-mālā*, (S), Poona, 1914
- Dhārākālpa, Y T Acharya (ed), Bombay 1923
- Dutta, U C , *The Materia Medica of the Hindus*, Calcutta 1870, Varanasi, Chowkhamba, 1980 (Revised third ed)
- Filliozat, J , *The Classical Doctrine of Indian Medicine*, Delhi, Munshi Ram Manohar Lal, 1964

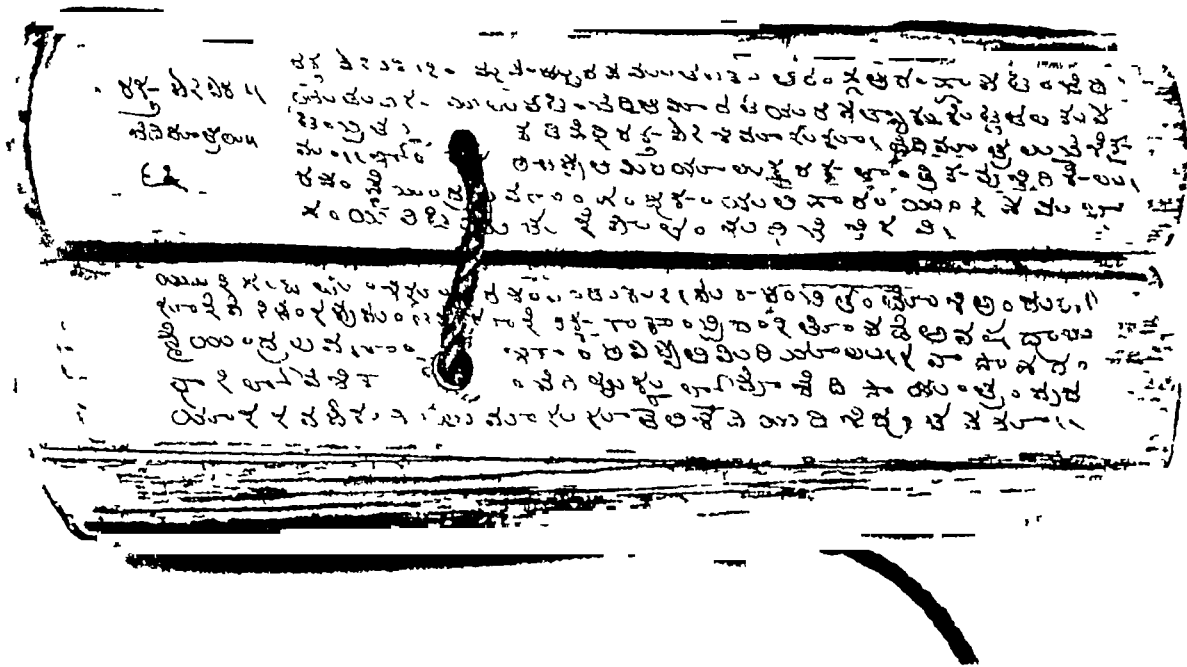
Select Bibliography

- Finckh, Elisabeth, *Foundations of Tibetan Medicine*, London and Watkins, Watkins, 1978
- Gopāla-Krshna, *Rasendra-samgraha*, (S), Varanasi, Chowkhamba Skt Series, 1937
- Govinda, *Rasa-hrdaya*, (S), Bombay, Y T Acharya (ed), 1911
- Gupta, Umesh-Chandra, *Vaidyaka-śabda-sindhu*, (S), Calcutta, 1894
- Iyer, T G Ramamurti, *The Handbook of Indian Medicine or The Gems of Siddha System*, Erode, Sri Vani Vilas Press, 1933
- Jolly, J , *Early Medical Literature of India*, London 1893
- Jolly, J , *Indian Medicine*, Tr by C G Kashikar, Poona, 1951, Delhi Munshi Ram Manohar Lal, 1977
- Jivanrām Vaidya, *Forceps used by the Ancients of India*, Bombay 1892
- Kālidās, Jivārām, *Rasa-chintāmani* (S), Bombay, 1914
- Kāśīnātha, *Ajīrna-mañjarī*, (S) mss
- Kāsyapa-samhitā*, (S), (on Toxicology) Yatirāja-Svāmī (ed), Madras, 1933
- Kāsyapa-samhitā*, (S) (On Midwifery and Gynaecology), Y T Acharya and Hemaraj Sarma, Bombay, Nirnaya-Sagar, 1938
- Keśava, *Siddha-mantra-prakāsa*, (S), Bombay, Y T Acharya, 1909
- Kutumbiah, P, *Ancient Indian Medicine*, Madras, Orient Longmans, 1962
- Lal-Sengupta, K B , *Āyurveda-dravyābhidhāna*, (S), Calcutta, 1895
- Lolambarāja, *Vaidyāvatamsa*, Ahmedabad, 1908
- Lolambarāja, *Vaidya-jīvana*, Bombay, Venkateshvar Press, 1910
- Mādhava, *Āyurveda-prakāsa* (S), Yadavji Trikumji (ed), Bombay, 1924
- Mādhava, *Prayoga-chintāmani*, (S), Calcutta
- Mādhava-kara, *Rugviniśchaya*, (*Mādhava-nidāna*) (S) (with comm of Vijaya-rakshita and Srikantha), Sarada Charana Sen (ed), Varanasi, 1932, Y T Acharya (ed), Bombay 1920, with Madhu Kosha, Jivananda, Calcutta 1875
- Mitra-mīśra, *Viramitrodaya* (S), Calcutta, Jivananda Vidyasagara (ed), 1875
- Mookerjee, Bhudev, *Rasa-jala-nidhi*, (S), Calcutta, 1926
- Moreśvara, *Vaidyāmṛta*, (S), Varanasi, 1867
- Mukhopadhyay, B , *History of Indian Medicine*, (3 vols), Calcutta, Calcutta Univ , 1922-29)
- Mukhopadhyay, G , *Surgical Instruments of the Hindus*, Calcutta
- Nadkarni, K M , *Indian Materia Medica* (2 vols), Bombay, Popular Prakashan, 1976 (3rd ed)
- Nakula, *Aśva-chikitsā* (S), Calcutta, Bibl Ind , 1886
- Nārāyana, *Rāja-vallabha-dravya-guna* (S), Bombay, Venkateshwar Press ,
- Nighantu-ratnākara* (S) Godbole (ed), Bombay 1867
- Pārada-kalpa* (*Rudra-yāmala*) (S), (2 vols), Bombay, Y T Acharya (ed), 1911 and 1915

- Pārishadyam Śabdārtha-śarīram* (S), Damodar Sharma Gaud (ed), Nagpur, Vaidyanath Ayurved Bhavan, 1979
- Rāma, Vaidyaka-sāra* (S), Bombay, Raghuvamsa Sarma, 1896
- Rāvana, Arka-prakāśa*, (S), Bombay, Venkatesvara Press, Madras, D Gopalacharlu (ed), 1914
- Rāvana, Nādi-parīkshā*, (S), Bombay, Y T Acharya (ed) 1923
- Ray, P and Gupta, H N *Charaka-samhitā* A Scientific Synopsis, New Delhi, Ind National Science Academy, 1965
- Ray, P, Gupta H N, and Roy, M *Suśruta-samhitā, A Scientific Synopsis*, New Delhi, Ind National Science Academy, 1980
- Ray, P C *History of Hindu Chemistry*, (2 vols), Calcutta 1902 and 1925
- Rechung Rimpoche, *Tibetan Medicine*, Berkeley, Univ of California Press, 1973
- Royle, *An Essay on the Antiquity of Hindu Medicine*, London, 1837
- Śālinātha, *Rasa-mañjarī* (S), Poona, T G Kale, 1915
- Śankara, *Vaidya-vinoda*, (S), Bombay, Venkateshvar Press, 1913
- Śārṅgadhara-samhitā*, (S), Prabhu-ram Jivan-ram (ed), Bombay, 1891, Bombay, Nirṇaya-Sagara, 1922
- Savanur, H V, *A Handbook of Ayurvedic Materia Medica*, vol I, Belgaum, Jathar, 1950
- Seal, B N *Positive Sciences of the Ancient Hindus*, Calcutta
- Sen, Ganānāth, *Pratyaksha-śārīram*, (S), Part I, Calcutta 1913
- Sengupta, N N *The Ayurvedic System of Medicine*, vol I, Calcutta, 1919
- Sharma, P, V, *Āyurved ka vaijñānik itihās*, Banaras, 1975
- Sharma, P V, *Dravya-guna-vaijñānam*, (S), Varanasi, Chowkhamba Skt Sansthān 1978 (- vols)
- Siegerist, H E *A History of Medicine* (2 vols), Yale, 1951-61
- Sodhala, *Gada-nigraha*, (S), Y T Acharya, Bombay 1924
- Śrībindu, *Rasa-paddhati*, (S), Y T Acharya, -Bombay, 1925
- Suśruta, *Suśruta-samhitā*, (S), Calcutta Jīvānanda Vidyasagara (ed), 1889, (with *Bhānumati* and *Nibandha-samgraha*), Calcutta, Ganga-prasad Sen (ed), 1888 ff, Bombay, Nirṇaya-Sagara, 1915 and 1931, Calcutta, N N Sengupta and B C Sengupta 1937 (2 vols)
- Tīsata, *Chikitsā-Kalikā*, (S), (with comm of Chandrata), Lahore, Mitra Ayurvedic Pharmacy, 1926, Kottayam, N S Moos, 1950
- Todarānanda, (S), Bikaner, Anup Skt Lib
- Trimalla, *Yoga-taranginī*, (S), Poona, Ānandāśrama Samskrit Series, 1913
- Udupa, K N, and Singh R H, *Science and Philosophy of Indian Medicine*, Nagpur, Baidyanath, 1978
- Ugrāditya, *Kalyāna-kāraka*, (S), Sholapur, 1940
- Vāgbhata *Ashtāṅga-hṛdaya* (S), Bombay, G K Press, 1880, Jivananda Vidyasagara (ed), Calcutt, 1882, A M Kunte (ed), Bombay 1891, Motilal Banarsidass, Lahore, 1933, (with comm of Chandranandana, Aruna-datta and Hemādri), Bombay, Venkateshvara Press, 1928, (with comm of Arunadatta and Hemādri), Bombay, Nirṇaya-Sagar, 1939, (with comm of Parameśvara), Kottayam, N S

- Moos, 1950, (with Hindu tr after Sarvāṅga-sundara) Banaras, Motilal Banarsidass 1963
- Vābhata, *Rasa-ṛatna-samucchaya*, (S), Poona Ānandāsrama Skt Series, 1890, Calcutta (with Bengali tr), 1915
- Vallabha, *Vaidya-chintāmani*, (S), Madras, P V K Rao 1921
- Vangasena, *Chukitsā-sāra-samgraha*, (S), Calcutta, Jivananda Vidyasagara 1893, Lahore, 1928
- Vararuchi *Yoga-sataka*, (S) with Sinhalese Comm , Colombo M P Parera 1877
- Vira-rājendra *Sakala-vaidya-samhitā-sārāṇava*, Mysore, Mysore Univ 1932 and 1964
- Vrnda *Siddha-yoga*, (S) (with comm of Srī-kantha) Poona 1894
- Vrnda-madhava, (S) Poona, Hanumant-Sastri Padhye 1894
- Webb, A *The Historical Relations of Ancient Hindu with Greek Medicine*, Calcutta, 1850
- Wilson H H *On the Medical and Surgical Sciences of the Hindus* Calcutta 1845, London 1864
- Wise, T A , *Commentary on the Hindu System of Medicine*, Calcutta 1845, London 1860
- Yādavji-Trīkamji Āchārya, *Āyurveda-guṇa-vijñānam*, (S) (2 vols), Nagpur, Vaidyanath Ayurved Bhavan, 1976
- Yasodhara, *Rasa-prakāsa-sudhākara*, (S), Gondal, Jivaram Kalidas, 1926
- Yogānanda-nātha, *Āyurveda-sūtra*, (S), Mysore, University of Mysore, 1922
- Zimmer H R *Hindu Medicine*, Baltimore, John Hopkins 1948

Specimen Pages of Language Texts



Specimen of a palm leaf manuscript of recipes prepared by the physicians

టీ॥ కిరాతతిక్తః-కైరాతః-భూనింబః-రామనేనకః-అనునవి నేల వేముపేర్లు.
[త్రివిధేయమృ=నిలవేంబు]

నేల వేముగుణము.

శ్లో॥ భూనింబో వాతలస్నిగ్ధః కఫపిత్తజ్వరావహః । వ్రణసంక్రా-
పణః పథ్యం కుష్ఠకం డూతిశోఫహృత్ ॥

తా॥ నేల వేము వాతముజేసును జగటుగనుండును కఫజ్వరము పిత్తజ్వరము
వ్రణములు కుష్ఠపు దురద వాపు వీటినిపోగొట్టును. పథ్యకరముగ నుండును,
తురక వేము.

శ్లో॥ కిరాతకోన్యోనైపాలో నాడితిక్తోజ్వరాంతకః । కండుతిక్త-
ర్థతిక్తస్సాస్త్రిస్సద్రాస్సన్నిపాతహః ॥

టీ॥ నైపాలః నాడితిక్తః-జ్వరాంతకః - కండుతిక్తః-అర్థతిక్తః - నిద్రాః
సన్నిపాతహః-అనునవి తురక వేముపేర్లు. [మైవిధేయమృ=మలైవేంబు]

తురక వేముగుణము.

శ్లో॥ నైపాలో వాతలోయాక్షశ్శీతలస్తి క్తకోలఘుః సన్నిపాతజ్వర-
శ్వాసశాసపితాస్రదాహనుత్ । కఫపిత్తం జ్వరం కుష్ఠం కండుం శోఫం
కృమీజయేత్ ॥

తా॥ తురక వేము వాతముజేసును. తాపమునిచ్చును. శీతలముగ చేదుగ నుం-
డును. తేలికనిచ్చును. సన్నిపాతజ్వరము శ్వాసము కాసము పిత్తరక్తము అంగతా-
పము కఫము పిత్తము జ్వరము కుష్ఠపు దురద వాపు నులిపురుగులు వీటిని హరింపె-
జేయును.

కరి వేప.

శ్లో॥ కైడర్యోథమహానింబో రావణోగిరినిచ్చుకః ॥

టీ॥ కైడర్యః-మహానింబః-రావణః-గిరినింబకః-అనునవి కరి వేపపేర్లు.
[శుగ్రీవిధేయమృ=కరివేపయ]

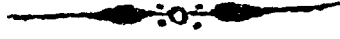
కరి వేప గుణము

శ్లో॥ కైడర్యకటుకస్తి క్తః కఫాయశ్శీతలోలఘుః । సంతాపశోష-
కుష్ఠార్కః క్రిమిభూతవిషాపహః ॥

తా॥ కరివేప కారముగ చేదుగ విగరుగ శీతలముగ నుండును. తేలికనిచ్చు-
ను. దేహతాపము శోష కుష్ఠపు మూత్రము క్రిములు భూతములవలనిబాధ విడుద-
లవీటినిపోగొట్టును.

॥ श्री ॥

शार्ङ्गधरसंहिता.



श्रीगणेशायनमः॥ ॥ग्रंथाचे आरंभां मध्ये आणि शेवटीं मंगल अ-
सावे असें शास्त्र व शिष्टाचार आहे यास्तव ग्रंथाकार शिवभवानीस्म-
रणरूप मंगल करितात.

श्रियंसदद्याद्भवतां पुरारिर्यदंगतेजः प्रसरे भवा- मंगलचरणः
नी ॥ विराजते निर्मलचंद्रिकायां महौषधीवज्ज-
लिताहिमाद्रौ ॥ १ ॥ ॥ ७ ॥ ॥ ७ ॥

अर्थ.- हिमालयाच्या दार्ढी अत्यंत दैदीप्यमान महौषधी चंद्रज्योत्स्ना
असतां जशी शोभा पावत्ये त्या प्रकारें ज्याचे अंगतेजःप्रसाराचे दार्ढी भवा-
नी शोभते असाजो शिव तो तुम्हास लक्ष्मीतें देवा.

प्रसिद्धयोगामुनिभिः प्रयुक्ताचिकित्सकैर्ये बहुशो- ग्रंथालासम्पू
नुभूताः ॥ विधीयते शार्ङ्गधरेण तेषां ससंग्रहः सज्ज- लतवधंथा
नरंजनाय ॥ २ ॥ चें प्रयोजनः

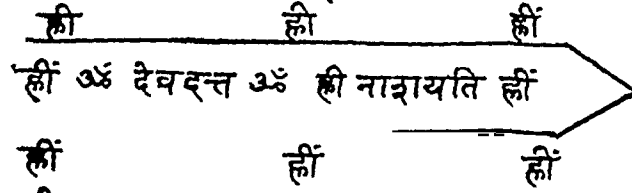
अर्थ.- चरकादिक मुनीनी कथन केलें आणि वैद्यानीं वारंवार नाम
रूप योजनादिके करून अनुभविले असेजे विख्यात योग त्यांचा सुसं-
ग्रह साधूंचे मनोरंजनार्थ शार्ङ्गधराचार्य कथन करितात.

हेत्यादिस्त्रुपाकृतिसात्स्यजातिभेदैः समीक्ष्यातु- रोगनिश्चय
रसर्वरोगान् ॥ चिकित्सितं कर्षणं हृणारव्यं कु- पूर्वचिकि
वीतवैद्यो विधिबत्सुर्योगैः ॥ ३ ॥ ॥ ७ ॥ त्ता.

अर्थ.- हेतु आदिरूप आकृति सात्स्य जाती या भेदे करून रोग्यांचे-

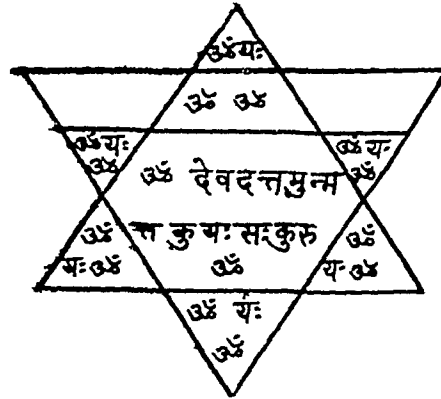
(२६)

१४६



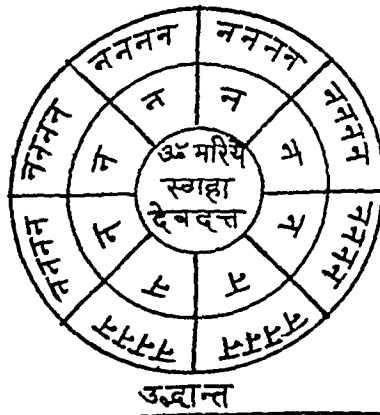
गोरोचनसे भोजपत्रपर लिख पात्रमें रख दूधसे प्लावित कर जलमें डालदे शत्रुकी शांति हो.

१४७



शत्रुके रस श्रीर काकके रुधिरसे उद्दान्त पत्रपर लिख नीमकी शाखामें वायव्य दिशामें धारणकरे तो उन्मत्त हो यह अनुभव किया है सत्य है.

१४८

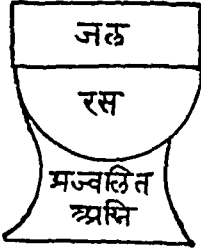


भोजपत्रसे इष्टवा हरिद्रा हरितालसे जिसका नाम लिख प्रच्छन्न स्थापन करे वह नष्ट हो निकालनेसे स्वस्थ हो.

मंत्र और यंत्र दोनों ही के करने से
शीघ्र सिद्धि होती है- निजनिज
विधिके मंत्र विधिसे समझलेना

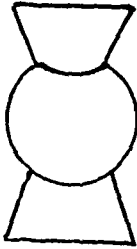
१४९

पाताल यंत्र



दोला यंत्र

१५२

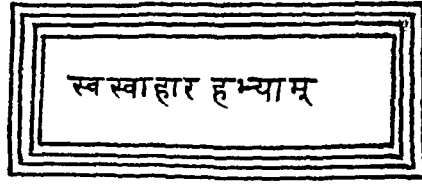


१५५



मट्टी के पात्र में

१५०



साध्यके रक्तसे शत्रु कानाम
भोजपत्रपर लिख सिकोरे में डाल
ज्वलित अग्नि में स्थापन करें उसी
समय शत्रु नष्ट हो-

१५१

वालुका यंत्र



प्रज्वलित अग्नि

कच्छप यंत्र १५३

(पुटकलुका)

रस

जल

कच्छप

१५४



भूधर यंत्र

इतिकामरत्नपरिशिष्टम्.

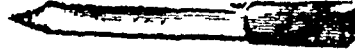
शलाकाशस्त्रम् ।

ताम्रौ शलाका हिमुखा सुखे कुररकाकृतिः ।
नेत्रनाडीं तथा विध्येत् कफदोषसमुद्भवाम् ॥



सुद्रिका ।

अदेभिन्ध्यप्रपर्वप्रमाणा फलेऽर्धाङ्गुलायता सुद्रिका ।



वडिशः ।

अहणे शुण्डिकामादेर्वडिशः सुनताननः ।



करपत्रम् ।

अदेऽस्यां करपत्रन्तु खुरधारं दद्याद्गुलम् ।
विस्तारि द्वाङ्गुल सूक्ष्मदन्तं सत्सखन्धनम् ॥

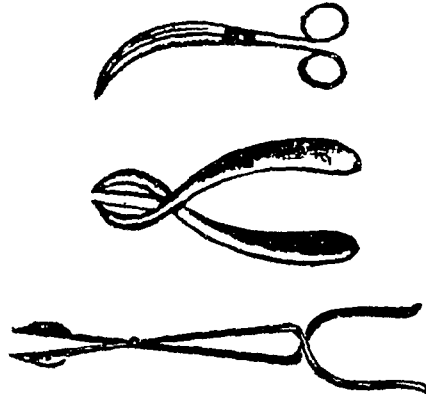


कर्त्तरी ।

आयुस्त्रिगर्भशल्यानां केशादीनाञ्च कर्त्तने ।
विविधाकृतयो योज्याः कर्त्तर्यः कर्त्तरीनिभाः ॥



Specimen pages of illustrations of surgical instruments described by Susruta given by in early Āyurvedic treatise in Sanskrit Āyurveda vijnānam by Vinod Lal Sengupta Calcutta printed in the year 1927



नखशस्त्रम् ।

वक्रजुंधारं द्विमुखं नखशस्त्रं नवाङ्गुलम् ।
सूक्ष्मशस्त्रोद्धृतिच्छेदभेदप्रच्छानलेखने ॥



दन्तलेखनम् ।

एकधारं चतुष्कोणं प्रवृद्धाकृति चैकतः ।
दन्तलेखनकं तेन शोधयेद्दन्तशर्करान् ॥



सूची ।

वृत्ता गूढदृढाः पाशे तिस्रः सूच्योऽत्र सीवने ।
मांसलानां प्रदेशानां त्रिस्रा त्र्यङ्गुलमायता ॥
अल्पमांसास्थिसन्धिस्रवणानां द्व्यङ्गुलायता ।
ग्रीहिवक्त्रा धनुर्वक्त्रा पक्वामाशयमर्म्मसु ॥
सा सर्पद्व्यङ्गुला सर्वा वृत्तास्ताः सूचयः स्मृताः ॥

अधिकन्तु विषघ्नोऽयम् । अस्य त्वग्ग्राह्या, मात्रा
१ माषकाः । लोध । पटियालोध । सावरलोध ।

प्रियङ्गुर्गन्धप्रियङ्गुश्च ।



प्रियङ्गोः शाखापत्रफलानि ।

प्रियङ्गुः फलिनी कान्ता लता च महिलाह्वया ।

गुन्द्रा गुन्द्रफला श्यामा विष्वक्सेनाङ्गनाप्रिया ॥

प्रियङ्गुः शीतला तिक्ता तुवरानिलपित्तहृत् ।

रक्ताभियोगदौर्गन्ध्यस्वेददाहज्वरापहा ॥

वाग्निभ्रान्त्यतिसारघ्नी वक्त्रजाग्रविनाशिनी ।

गुल्महृद्विषमोहघ्नी तद्वह्न्यप्रियङ्गुका ॥

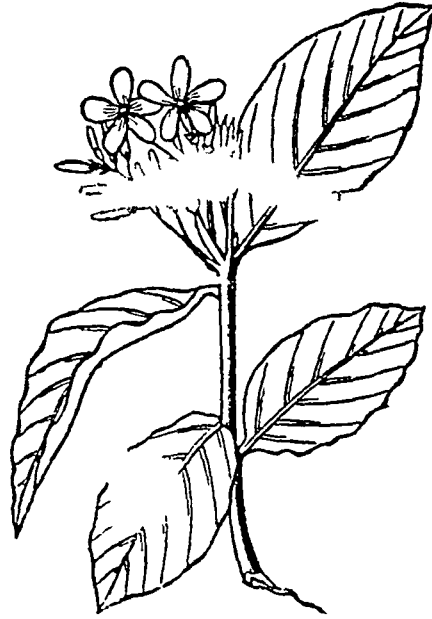
तत्फलं मधुर रुक्ष कषाय शीतलं गुरु ।

विबन्धाधानबलकृत् संग्राही कफपित्तजित् ॥

अस्यास्त्वचो मात्रा १ माषकः, फलस्य ६ रत्तिकाः ।

फलमेवास्याः सदा व्यवह्रियते । प्रियंगु, फुलप्रियंग ।

कुटजः । (कोरिया । कुठेया । कुडा ।)



कुटजः कूटजः कौटो वत्सको गिरिमल्लिका ।

कालिङ्गः शक्रशाखी च मल्लिकापुष्प इत्यपि ।

इन्द्रो यवफल, प्रोक्तो वृक्षकः पाण्डुरद्रुमः ॥

कुटजः कटुको रुक्षो दीपनस्तुवरो हिमः ।

तिक्तः संग्राहकः प्रोक्तस्त्वग्दोषज्वरनाशनः ।

श्रीः ।

वैद्यवरश्रीडल्हणाचार्यविरचितया निबन्धसंग्रहाख्यन्याख्यया

समुल्लसिता

महर्षिणा सुश्रुतेन विरचिता

सुश्रुतसंहिता ।



आयुर्वेदीयग्रन्थमालासंपादकेन

आचार्योपाहनेन त्रिविक्रमात्मजेन यादवशर्मणा संशोधिता ।



मुम्बय्यां

तुकाराम जावजी

इत्येतैः स्वकीये निर्णयसागरमुद्रायन्त्रालये आयसाक्षरैः

मुद्रापयित्वा प्रसिद्धिं नीता ।

शके १८३७

मूल्य ८ रूप्यका. ।

१. लम्बा ककलपिडघ्नी देवदूतविभाषा
 २. लम्बा ककलपिडघ्नी देवदूतविभाषा

স্মৃতিপ্রমত্তদিবসে প্রভৃতি ব্রহ্মচারিণী দিবস্বপ্না-
 ত্তেনাপ্যতদানানুমেয়নাভ্যন্তরম্বেদনপ্রথা-
 বনশ্রমকর্মমাতিশব্দপ্রবর্তাবলেশমানিত্যায়াম্
 পরিহরেৎ ।

যুগ্মশুভ পুমান্, সোমো দিবঃ শুক্লাশ্বনা ।
 পূৰ্ণকালে শুক্লিষ্ঠাদপত্যর্থী ত্রিসংব্রজে ॥

五、

যথেষ্ট দিনে স্বাভাৱিক ভাৱে তৰংগ
 আৱেগ আৰু তৰংগ আৰু আৱেগ আৰু
 আৱেগ দিনে স্বাভাৱিক ভাৱে তৰংগ
 আৱেগ আৰু তৰংগ আৰু আৱেগ

অমৃতম স্ত্রী পুমান্ যুগ্মম অক্লান্তাংছ ন স্ক
 শুভং যিক্ছাৎ পুরুষঃ প্রমদা নজ্যো যিক্ছাৎ
 শুক্লো যানিতয়ো আশ্রয়া হৃদীয়া প্রকৃতির্ভবেৎ ॥

पद्मसूत (हम्) । स्त्री । पद्म । रा. नि. व. १० ।

पद्मवारि । स्त्री । काश्चिद्वै. वै. नि. व. ।

पद्मवासः । पुं । कर्कटे । रा. नि. व. १६ ।

पद्मशक्तिः । स्त्री । यक्षी । किङ्कर । चिका ।

पद्मशू(घू, सू)रणः । पुं । पद्मकन्दे । शीङ्कर । चिका ।

पद्मारः । पुं । (Vallisneria, or Tropa hispidosa) जलजवृक्षविशेष, कण्टकसेवत्य । मे. ।

पद्मिलः । पुं । पद्ममे । मलिन ।

पद्मीरः । पुं । टिड्मपचिषि । टिड्मि आशी । वै. नि. व. ।

पद्मेज(रह)म् । स्त्री । कमले । रा. नि. व. १० ।

पद्मक्षिकण्टकः । पुं । अपामार्गच्छेदे । रा. नि. व. ४ ।

पद्मक्षिकन्दः । माषाकन्दे । रा. नि. व. ७ ।

पद्मक्षिचरः । पुं । कुररपचिषि । रा. नि. व. १६ । कौष्ठपचिषि । म. वि. ।

पद्मक्षिवीजः (कः) । पुं । बर्वूरकवृक्षे । वा. च. गा. ६ । रा. नि. व. ८ । आरवधवृक्षे । क. वि. कारवृक्षे । आनाम, ठौनेन क. ५. गा. ६ । रा. नि. व. ८ ।

पद्मक्षिशूलः । पुं, स्त्री । परिणामशूल । निदा-
नलक्षणे । “स्त्रीनिदाने प्रकृतिता वात, उद्भिद्धितो
यदा । कफपित्तं समावृत्य शूलकारी भवत्युत्तरी ।
भुक्ते जीर्यति यश्चूल तदेव परिणामजम् । तस्य
लक्षणेन स्यात् समासेनाभिप्रीयते । प्राधानाटोप-
विष्णुचक्रविन्यासविशेषः । क्षिप्रवीणीपद्मप्रपञ्च
वातिक तद्वदेष्टव्यम् । दण्डादाहारातिस्वेदकटुश्च
लवण्योत्तमम् । शूल श्रौतशमप्राय पैत्तिक तद्वदे-
ष्टव्यम् । कर्द्विद्वद्भाससमीक्षस्वल्परन्दीर्घसम्पत्तिः ।
कटुतिक्तोपशमो च विशेषश्च कफात्मकम् ॥” इ-
त्यादि । [योर्वधात् ॥” सु. नि. १५ ।

पद्मः । पुं । वातव्याधिविशेष । “पद्मः सकृद्वीर्य-
प्रभुत्व(श्च)कारिणी । स्त्री । प्रियङ्गुवृक्षे ।

पद्मस्यम् । स्त्री । पद्मभावे । रा. नि. व. ४ ।

पद्मनम् । स्त्री । पाके । पुं । चप्पी । म. व. ।
स्त्री (नो) । वनवीजपुट्टे । रा. नि. व. ११ ।

पद्ममृचा । स्त्री । दारुहरिद्रायाम् । प. ह. ।
भा. म. १३. तन्द्रिकज्व. वि. । “मरिचकचपद्ममृचा
वचारक्तः ॥”

पद्मा । स्त्री । पाके । म. व. ।

पद्मेलुक । पुं । पाचके । चिका ।

पद्ममानज्वरः । पुं । ज्वरविशेष । भद्रिषु
ज्वर । लक्षणम्—“ज्वरवेगोऽधिकस्तथा कर्द्वी-
सारविद्युद्वा । मलप्रवृत्तिरुत्क्रेशः पद्ममानस्य
लक्षणम् ॥” भा. नि. ।

पद्मः । पुं । तिर्यक्तटीले । वै. नि. व. ।

पद्मकदम्बम् । स्त्री । जीवनपद्ममूले जलपद्म-
मूले च । वा. सू. १५. व. ।

पद्मकान्दाः । पुं । पद्मसिद्धीषधिविशेषेषु । ते
च तैलकन्दकोष्ठकन्दसुधाकन्दरुदानीसर्पाख्यात-
काः । रा. नि. व. १२ । See सिद्धीषधिः ।

पद्मकपित्थम् । स्त्री । कपित्थस्य मूलकल्पन
फलपुष्पेषु । वा. च. १८. व. ।

पद्मकर्म्म । स्त्री । वमनविरिकनस्य निरुद्धानुवास-
नेषु । वमनादि औष्ठ्यकार्ये क्रिया । “प्रथमं
वमनं पश्चात् विरेकानुवासनम् । एतानि पद्मक-
र्माणि निरुद्ध्य नावन तथा ॥” भा. । तेषु न्यून-
समाधे अतीताश्रीत्यर्थे च नस्य, जनबादशे धूमः,
जनपद्मे कवलः, जनदशने अतिप्राप्तसमती च
शोधन, न्यूनषोडशे समतिवार्षिके च रक्तनीच
न देयम् । एतानि दोषनिहरणार्थं यथाकारं प्र-
योज्यानि । प. म. ४. ख. । विशेषास्तपश्चन्द्रे सग्याः ।

पद्मकषायः । पुं । वचावासापटोलप्रियङ्गुनि-
श्वात्मकद्रव्यवर्गः । भा. म. ४. म. यो व्या. वि. । “पू. चै.
पद्मकषायजैः ॥” भैष. कर्णरी. वि. ।

पद्मकीरः । पुं । जलकुक्षि । चिका ।

पद्मकृत् (त्यः) । पुं । पर्कटीवृक्षे, पक्षीवृक्षे ।
रा. नि. व. ८ ।

ಯೋಗರತ್ನಾಕರ

ಎಂಬ

ವೈದ್ಯಗ್ರಂಥ

ಕರ್ನಾಟಕಾನ್ಯಾಯೋಪಕಾಸಹಿತ

YOGARATNĀKARA.

A TREATISE ON MEDICINE COMPILED FROM VARIOUS SOURCES

TRANSLATED INTO KANNADA AND TELUGU

BY THE

PANDITS OF THE GOVERNMENT ORIENTAL LIBRARY,
MYSORE

PART I.

Published by the Curator, Government Oriental Library, under the Authority
of the Government of His Highness the Maharaja of Mysore

MYSORE

PRINTED AT THE GOVERNMENT BRANCH PRESS,
1899

Price Rs. 2½

ಮುಂತಾದ) ದೇಹದ್ವಾರಗಳಿಂದಲೂ, ರೋಮಕೂಪೇಭ್ಯ
ಕ್ಷ-ರೋಮಕೂಪಗಳಿಂದಲೂ, ರಕ್ತಂ ಪ್ರವರ್ತತೇ-ರ
ಕ್ತವು ಹೊರಡುವುದೂ, ಸಃ-ಅವನು, ಸದ್ಯಃ-ಆಗಲೇ
ಜೀವಿತಂ-ಪ್ರಾಣವನ್ನು, ತ್ಯಜೇತ್-ಬಿಡುವನು

ವಿಷಮುತೇ ಗುಗುಪ್ಸಾಃ ಶಕಯಂತು ವಾಙಿ ರ್ಕದಹಾಪಮು
ಲಂಕು ಸೇತ್ರಾದಿ ಇಂದ್ರಿಯವ್ಯಾಸಮಲಂಕು ರಕ್ತಮು ಸ್ರವಿಂ
ವಿನ ಆ ಸಕುರು ಅಪ್ಸುಃ ಪುರಿತೇಂದಮ || ೧೫೭ ||

ಸಮ್ಯವಿಕಿತತಮಾನಸ್ಯ ವಿಕಾರೋ ಯೋಽಭಿವರ್ತತೇ |

ಪ್ರಣೀನಲಮಾಸಸ್ಯ ಲಕ್ಷಣ ತತ್ರತಾಪುಃ || ೧೫೮ ||

ಸಮ್ಯಕ್-ಚೆನ್ನಾಗಿ (ಕಾಸ್ತ್ರದಲ್ಲಿ ವಿಧಿಸುವಂತೆ), ಚ
ಶಿಷ್ಟ್ಯವಾನಸ್ಯ-ಚಿಕಿತ್ಸಿಸ್ಪಷ್ಟತೆಯಿರುವ ರೋಗಿಗೆ, (ದಿನೇ
ದಿನೇ) ಪ್ರಕ್ಷೇಪಣವೆಂಬಾಂಸಸ್ಯ-ಬಲವೂ ಮೂಸವೂ ಬ
ಹಳ ಕುಂದಿಹೋಗಿ, ವಿಕಾರೋಭಿವರ್ತತೇ (ಅತಿ) ಯಃ
-ರೋಗಿವು ಹೆಚ್ಚುತ್ತಿರುವುದು ಯಾವದಾಂವೆಂಬೂ, ತತಃ-
ಅದು, ಗತಾಯುಷಃ-ಆಯುಸ್ಸು ಮುಗಿದವನು, ಲಕ್ಷಣಂ
-ಚಿಹ್ನೆಯು

ವಾಗುಃ ಏತಿ ಕೃತೇಂದಕುರುಂತು ಸಹಸ್ರಿ ಎವಿಮಿ ಕುಂ
ಸಮು ಪ್ರೀಮುಃ, ವ್ಯಾಢಿ ಪುಣ್ಣಿಶೇಂದಿನ ಅದಿ ಆಯುಸ್ಸು ಶಿಶನ
ವಾಙಿ ಲಕ್ಷಣವು ಕೆಲವುಸಮಯ || ೧೫೯ ||

ಶ್ರುತ್ವಾಸ್ಯ ಶ್ಯಾಮಲೋಽಪ್ಯಸಿತರದತತಿ ಶೀತನಾಸಾಪ್ರದಶ
ಶೋಣಾಸಶ್ಚೇಕನೆತ್ರೋ ಲುಲಿತಕರಪದ ಶ್ರೋತ್ರಪಾತಿಯುಕ್ತ |
ಶೀತಶ್ವಾಸೋಽಪಿ ಶೋಣಾಸನಸಮುದಯ ಶೀತಗಾತ್ರಮಕಮ್ಯ
ಸೋದ್ರಗೋ ನಿರ್ಮಪಚ್ಚ ಪ್ರಮವತಿಮನುಜಸ್ಸರ್ವೇಯಾ ಮೃತ್ಯುಕಾಲೇ || ೧೬೦ ||

ಮನುಜಃ-ಮನುಷ್ಯನು, ಮೃತ್ಯುಕಾಲೇ-ಸಾಯು
ವ ಸಮಯದಲ್ಲಿ, ಕುಪ್ಲಾಸ್ಯಃ-ಬಾಯಾರಿದವನಾಗಿಯೂ,
ಶ್ವಾಮಲೋಽಪ್ಯಃ-ಕಪ್ಪಾದ ತುಪ್ಪಿಯುಳ್ಳವನಾಗಿಯೂ,
ಅನಿಶರದತತಃ-ಕಪ್ಪಾದ ಹೆಲ್ಲುಸುಬುಳ್ಳವನಾಗಿಯೂ, ಶೀ
ತನಾಸಾಪ್ರದೇಶಃ-ತಣ್ಣಗಿರುವ ಮೂಗುಳ್ಳವನಾಗಿಯೂ,
ಶೋಣಾಪ್ಪಃ-ಕಂಪದ ಕಣ್ಣುಳ್ಳವನಾಗಿಯೂ, ಏಕನೇ
ತ್ರಃ-ಬಂದೇಕಡೆಯಲ್ಲಿ ದೃಷ್ಟಿಯುಳ್ಳವನಾಗಿಯೂ, ಉರಿ
ತಕರಪದಃ-ಕೈಕಾಲುಗಳನ್ನು (ತಿರಿಚುವನಾಗಿಯೂ)
ಬೀಜಿ ಹಾಕುವನಾಗಿಯೂ, ಶ್ರೋತ್ರಪಾತಿತ್ಯಯುಕ್ತಃ-
ಕಿವಿಹೋಲುವಿದ್ದವ [ಕಿವುಡ] ನಾಗಿಯೂ, ಶೀತಶ್ವಾಸಃ-
ತಣ್ಣಗೆ ಉಸಿರುಬಿಡುವನಾಗಿಯೂ, ಅಧ ಚ-ಬಡನೆ

ಯೂ ಉಪ್ಪುತ್ವಸನಸಮುದಯಃ-ಬೆಚ್ಚಗೆ ಬೇಗಬೇಗ
ಉಸಿರುಬಿಡುವನಾಗಿಯೂ, ಶೀತಗಾತ್ರಪ್ರಕಂಪಃ-ಚಳ
ಯಿಂದ ಮೈನಡುಗುವವನಾಗಿಯೂ, ಸೋದ್ರೇಗಃ-ಭಯ
ದಿಂದ ನಡುಗುವವನಾಗಿಯೂ, ನಿವೃಪ್ರಂಚಃ-ಪ್ರಪಂಚ
ಜ್ಞಾನರೋಧನಾಗಿಯೂ, ಸರ್ವಥಾ-ನಾನಾವಿಧವಾಗಿ, ಪ್ರ
ಭವತಿ-ಆಗುವನು

ಮರಣಕಾಲಮುಸಂತು ಸಹಸ್ರಿ ಸ್ತೇಂದಕುರುಂತು, ಪದವಿ ಪಲ್ಲ
ನಲ್ಲಗಿಡು, ಮುಳ್ಳು ವಲ್ಲಗು, ಸೇತ್ರಮು ಎಲ್ಲುತ, ರಸ್ತೆ ವಾಲ್ಮುಕ
ಮಾಮುರು, ಹಸ್ತಮು ಪಾಪಮು ವರಿಮುರು, ಕೆದಿ ಜಾರು
ಪಾಲುಗಿಡಿಯು, ಕ್ಯಾಸಮು ಕಾಂಕಾಲಮು ಕಿಶಮುಗುಂದಿ ಮರಿ
ಕಾಂಕಾಲಮು ಕಿಶಮುಗುರು, ಕರಿಕೆ ಕೆಳಮು ವಗುರು, ಕ
ಫಯು ಕರಿಗಿಯು, ಪ್ರವಂಚಜ್ಞಾನಮು ಕಪ್ಪಿಯು, ಕಂಡು ||
|| ೧೬೦ ||

ಅಸೌಲೇಖಿತಲಕ್ಷಣೇನ ಪಯಸಾ ಪುಣ್ಡ್ರನಾ ಭಾಗುನಾ
ಪೂರ್ವದಕ್ಷಿಣಪಶ್ಚಿಮೋತ್ತರದಿಶ ಪಡ್ವಿಹಿಮಾಸೇಕಕಮ್ |
ಶಿಫ್ರ ಪಶ್ಯತಿ ಚೇತದಾ ದಶದಿನ ಭೂಕಾಂತಿ ಪಶ್ಚಿಮ
ತ್ವಾಲಾ ಪಶ್ಯತಿ ಸದಾ ಏವ ಮರಣ ಕಾಲೇ ಪಿತೃನಾನಾಮ್ || ೧೬೧ ||

ಅಷ್ಟೈಃ-ಚಕ್ರಗಳೊಡನೆ, ವಯಸಾ-ನೀರಿನೊಡನೆ,
ಪೂರ್ಣೇಂದನಾ-ಪೂರ್ಣಚಂದ್ರನೊಡನೆ, ಭಾಗುನಾ-
ಸೂರ್ಯನೊಡನೆ (ಕೂಡಿರುವಂತೆ), ಪುಣ್ಡ್ರ ರಕ್ಷೀಣಪುಣ್ಡ್ರ
ಮೋತ್ತರ ದಿಶಂ-ಪೂರ್ವದಕ್ಷಿಣಪಶ್ಚಿಮೋತ್ತರದಿಕ್ಕುಗಳ
ನ್ನೂ, ಪಶ್ಯತಿ ಚೇತ-ಕಂಡರೆ, (ಕ್ರಮವಾಗಿ) ಪಟ್ಟದ್ವಿ
ಮಾಸೈಕಕಂ-ಆರು ಮೂರು ಎರಡು ಒಂದು ವಯಸಗೆ
ಳೊಳಗೆ, ಮರಣಂ-ಸಾವು, (ಆಗುವುದು). ಅಧ್ರಂ-
ರಂಧ್ರವಾಗಿರುವಂತೆ, ಪಶ್ಯತಿ ಚೇತ-ಕಂಡರೆ, ದಶದಿನಂ-
ಹತ್ತು ದಿನಗಳೊಳಗೆ, ಮರಣಂ-ಸಾವು, ಭೂಮಾಕೃತಿಂ
-ಹೂಗಿಯ ಅಕಾರವನ್ನು, (ಕಂಡರೆ), ಪಂಚಮೇ-ಐದನೆ
ಯದಿನವನ್ನಲ್ಲಿ, (ಮರಣವು) ಜನ್ಮಲಾಂ ವಾಕ್ಯತಿ ಚೇತ
-ಉರಿಯನ್ನು ಕಂಡರೆ, ಸದ್ಯ ಏವ-ಆಗಲೇ ಮರಣಂ
-ಸಾವು, (ಎಂದು) ಕಾಲೋಚಿತಜ್ಞಾನಿನಾಂ-ಕಾಲಜ್ಞಾನಿ
ಗಳಿಂದ, ಲಕ್ಷಿತಲಕ್ಷಣೇನ-ನಿರ್ದಿಷ್ಟಪಟ್ಟ ಲಕ್ಷಣದಿಂದ,
(ತಿಳಿಯತಕ್ಕದ್ದು) ?

ಛಾಸಮು ದಕ್ಷಿಣಮು ಪಶ್ಚಿಮಮು ಕಿಶ್ರಮು ಈ ದಿಕ್ಪು
ಯಂತು ಕ್ರಮಮ್ ಗಂಡಿವಕ್ರಮುಲು ಕಿಶ್ರಮು ಛಾಸಮು
ಪ್ರದು ಸೂರ್ಯಕು ಅಗುಬದಿವಾಲುಕು ಕ್ರಮಮು ಆರು
ಮಾರು ರೆಂದು ಒಳಿಮನಮುಲೋಲ ಮರಣಮುಗಲುಗು

కళక

శ్రీకృష్ణ సారసంగ్రహము.

పిష్టిభిన్నగుజారసేనమవయఃసపిఃపచిన్నాచిషం ససిద్ధుక్త
నికుంఠిపంతుమదన్యైఃపానాన్ధృవం కామిలాః॥

టీ॥ అమృతబల్బియంతందు సణ్ణనాగి ఒందు కొలకగల్పే...
శాగళనలర్లి కషాయవేర్తి చాతుర్భాగావశ్యేషితేనాగి...
కాయసి అదరల్లి గబల్బు ఉసువిసదాలన్నా...
న్నాకుయ్యు కాసువాగు అదరల్లి, దాకువ కల్కద్రవ్య...
రేమరదరసిన, శ్రీగంధ, బద్ధక, న్యేదిలే, కళ్యంకడలే, అడుసె...
మూరేలేజొన్నే, స్థోగదే, యష్టిమగుక, బీలినకుళే, క్రిఫల్ప...
శ్చారిగడ్డే, చిప్పలి, రక్తకుండన, పుండ్రక ఇవిష్టా ప్రత్యేక...
దాతూకమాణిసే, కల్పవమాడి అదలొలుదాకి కాయసి...
ఇరుచిల్లొందు ప్రదిసదొలు లుదయకాలదల్లి శాలుకూక...
వం సేవిసలు విదారుదినగళొళగే కామాలే పరిచారవకుదు.

(కుంభ కామిలచికిత్స)

శ్లో॥ లుపిక్షయాతుశోభాధ్యాసోకృతాక్రమస్థుకామిలా॥
గ్ధమాంసరుధి గాతపి క్తకః కామిలాభక్రమకృషోవిదాచిని॥
వణానసఖరాచ్యుపిక్షయా॥ శోభయాగ్ధవతికుష్ఠకామిలా॥

టీ॥ కామాలేవ్యాధియన్ను లుపిక్షిసినరే శోభేపుంటాగి కుష్ఠ...
మిలేయకుదు. బళిక కష్టసాధ్యవాగిత్తుకుదు. అదరింద పిత్త...
గి దేహద రక్తమాంసగళన్ను దచిసి భ్రమే, బాయారికే, కావ...
టుమాడువదు. కణ్ణు, పుగురుగు, ఆరసనబణ్ణవాగి యిరువు.

(చికిత్స)

శ్లో॥ గోమూత్రేణపిక్తుంభ కామిలాయాంశిలాజితుం॥
సంమాక్షికథాకుంపాకిష్టంనామోకుసంభవం॥

టీ॥ గోమూత్రదల్లి కల్లశార మాణిసేదాకి, ప్రాకఃకాలదల్లి...
దుకింగళవరినూ శోడిసలు కామాలే పరిచార. వేమమాక్షిక...
దావన్నాదకూ మండూరవన్నాదకూ గోమూత్రదొంద ఒందు...
దుసేవిసలు కుంభ కామాలే పరిచారవకుదు.

శ్లో॥ లోకుమ

హః॥ అమృతబ

ల॥ మండూర, సే

న్నా ఫయాశవా

మోకులేసి లేల్ల

శ్లో॥ కులిశశా

పిత్రాద్భ్రమస్త్రవ

టీ॥ కణ్ణు, లుగురు

దావాదయా పుంఠ

ధ్రమే, కృషి, ప్రీ

వాద జ్వర, ఇవిష్ట

కొంబువదు.

శ్లో॥ కందాబి

చికిశంసంతివత్స్య

టీ॥ కందే, బలహా

గోగవెన్నిసేకొం

డసరుంటాగికుదు.

శ్లో॥ గళూచిస్వ

సద్ధంపిబిద్ధాక్రి

టీ॥ అమృతబల్బియర

గబల్బ, యివిష్టన్నా

దినంసేవిసలు కులిశ

సేకాయరపవంకూడ

శ్లో॥ కురికశి

లిమకంనికుంత్వా

టీ॥ అళలేకాయన

- مکتبہ اسلامیہ

$\frac{1}{2}$ కు అనుగుణముగా పనిచేసినందుకు
తనకు ఉన్న అన్ని ఆస్తులను
కొలుపుకొని ఇచ్చివేసి
మరణించాడు.

32456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100101102103104105106107108109110111112113114115116117118119120121122123124125126127128129130131132133134135136137138139140141142143144145146147148149150151152153154155156157158159160161162163164165166167168169170171172173174175176177178179180181182183184185186187188189190191192193194195196197198199200201202203204205206207208209210211212213214215216217218219220221222223224225226227228229230231232233234235236237238239240241242243244245246247248249250251252253254255256257258259260261262263264265266267268269270271272273274275276277278279280281282283284285286287288289290291292293294295296297298299300301302303304305306307308309310311312313314315316317318319320321322323324325326327328329330331332333334335336337338339340341342343344345346347348349350351352353354355356357358359360361362363364365366367368369370371372373374375376377378379380381382383384385386387388389390391392393394395396397398399400401402403404405406407408409410411412413414415416417418419420421422423424425426427428429430431432433434435436437438439440441442443444445446447448449450451452453454455456457458459460461462463464465466467468469470471472473474475476477478479480481482483484485486487488489490491492493494495496497498499500501502503504505506507508509510511512513514515516517518519520521522523524525526527528529530531532533534535536537538539540541542543544545546547548549550551552553554555556557558559560561562563564565566567568569570571572573574575576577578579580581582583584585586587588589590591592593594595596597598599600601602603604605606607608609610611612613614615616617618619620621622623624625626627628629630631632633634635636637638639640641642643644645646647648649650651652653654655656657658659660661662663664665666667668669670671672673674675676677678679680681682683684685686687688689690691692693694695696697698699700701702703704705706707708709710711712713714715716717718719720721722723724725726727728729730731732733734735736737738739740741742743744745746747748749750751752753754755756757758759760761762763764765766767768769770771772773774775776777778779780781782783784785786787788789790791792793794795796797798799800801802803804805806807808809810811812813814815816817818819820821822823824825826827828829830831832833834835836837838839840841842843844845846847848849850851852853854855856857858859860861862863864865866867868869870871872873874875876877878879880881882883884885886887888889890891892893894895896897898899900901902903904905906907908909910911912913914915916917918919920921922923924925926927928929930931932933934935936937938939940941942943944945946947948949950951952953954955956957958959960961962963964965966967968969970971972973974975976977978979980981982983984985986987988989990991992993994995996997998999100010011002100310041005100610071008100910101011101210131014101510161017101810191020102110221023102410251026102710281029103010311032103310341035103610371038103910401041104210431044104510461047104810491050105110521053105410551056105710581059106010611062106310641065106610671068106910701071107210731074107510761077107810791080108110821083108410851086108710881089109010911092109310941095109610971098109911001101110211031104110511061107110811091110111111121113111411151116111711181119112011211122112311241125112611271128112911301131113211331134113511361137113811391140114111421143114411451146114711481149115011511152115311541155115611571158115911601161116211631164116511661167116811691170117111721173117411751176117711781179118011811182118311841185118611871188118911901191119211931194119511961197119811991200120112021203120412051206120712081209121012111212121312141215121612171218121912201221122212231224122512261227122812291230123112321233123412351236123712381239124012411242124312441245124612471248124912501251125212531254125512561257125812591260126112621263126412651266126712681269127012711272127312741275127612771278127912801281128212831284128512861287128812891290129112921293129412951296129712981299130013

Page from a Physician's note book

(Continued from first flap)